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F. 227

GEOLOGICAL AND NATURAL HISTORY SURVEY OF CANADA.
ALFRED R. C. SELWYN, C.M.G., LL.D., F.R.S., F.G.S., DIRECTOR.

CATALOGUE

OF

CANADIAN PLANTS.

PART IV.—ENDOGENS.

BY

JOHN MACOUN, M.A., F.L.S., F.R.S.C.
Naturalist to the Geological and Natural History Survey of Canada.

MONTREAL:
DAWSON BROTHERS.

1888.

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PREFACE.

PART IV.

The first volume of this Catalogue of Canadian Plants consists of three parts separately published and bearing date 1883, 1884 and 1886 respectively. Part I. includes the Polypetalæ, Part II. the Gamopetalæ, Part III. the Apetalæ and Gymnosperms. Part IV., now issued, is devoted to the Endogens, and forms the first portion of Volume II. of the Catalogue. Part V. will include the ferns and their allies with the mosses and liverworts, and it is intended in Part VI. to catalogue the lichens, fungi and seaweeds.

Over 2,000 species of named cryptogamous plants, to be catalogued in Parts V. and VI., are now in the herbarium, and it is probable that the number will be raised to 2,500 before these parts are published, so that the entire work will enumerate about 5,500 species of plants (indigenous and introduced) found growing without cultivation within the limits of Canada.

Since the publication of Part III. extensive collections have been made by James M. Macoun on the shores and islands of James Bay. Dr. G. M. Dawson has made valuable and interesting notes and collections in that part of the North-West Territories bordering on Alaska. The writer spent five months collecting on Vancouver Island and gathered much valuable information regarding its flora. That part of this additional information which is applicable to the Endogens is included in the present issue.

In accordance with the plan adopted at the commencement of the work, I have placed myself in communication with specialists in the various orders and have had their assistance in the determining and verifying of critical or new species.

As on former occasions, Dr. Sereno Watson has rendered valuable assistance, especially in the Liliaceæ and Juncaceæ. In the Naiadaceæ I have had very much help from Mr. Arthur Bennett, F.L.S., Croydon, England, and from Rev. Thomas Morong, Ashland, Mass. These gentlemen, by examination and comparison of authentic

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specimens, have enabled me to give a very satisfactory account of our River-weeds. W. H. Beeby, A.L.S., London, England, and Mr. Morong have contributed critical notes on the Spargania of Canada, Mr. Beeby having sent my specimens to Norway in order that our northern forms might be compared with Scandinavian types.

The genus Carex, as was to be expected, gave rise to many perplexing questions. Besides availing myself of Prof. L. H. Bailey's monograph of the genus, I sent him many specimens of critical species, and have embodied in the text his remarks and occasionally his descriptions of new species and varieties. While not agreeing with him in every particular, his determinations have generally been accepted as conclusive. Mr. Bennet has rendered invaluable assistance, and besides comparing my specimens with those in his own herbarium has transmitted them to Kew and to Scandinavian specialists for comparison with the types. From his remarks it is quite evident that the correct nomenclature of our northern carices is not yet settled.

To the veteran botanist, Dr. Vasey, of the Agricultural Department at Washington, I am deeply indebted. For many years he has examined critical species and confirmed my determinations of the Graminese from all parts of Canada. All the species in this order are named in accordance with his catalogues, and in every case his decision has been taken as final.

In arranging the orders and genera I have followed Bentham & Hooker's *Genera Plantarum*, and the authority for the genus, as given by them, I have accepted. The preparation of this portion of the Catalogue has entailed much labour, on my part, and though conscious that the results accomplished are far from perfect, I would ask the indulgent criticisms of botanists who can well appreciate the difficulties of the work.

JOHN MACOUN.

OTTAWA, June, 1888.

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ENDOGENS.

CII. HYDROCHARIDACEÆ. Frog's-Bit Family.

585. ELODEA, Michx. Fl. I., 20. (WATER-WEED.)

(2208.) **E. Canadense,** Planchon. Michx. Fl. I., 20.

Udora Canadensis, Nutt. Gen. II., 242.
U. verticillata, Spreng. Hook. Fl. II., 193.
Anacharis Canadensis, Planchon. Gray, Man. Ed. V. 495. Macoun, Cat., No. 1756.
Serpicula occidentalis, Pursh. Fl. I., 33.

Very abundant in still waters of rivers, and in lakes and ponds throughout Quebec and Ontario. Although it makes a luxuriant growth in summer, it never chokes Canadian streams, as the frosts of winter destroy it. (*Macoun.*) Souris River, Assiniboia. (*J. M. Macoun.*) Canada to the Saskatchewan. (*Hooker, Fl.*)

586. VALLISNERIA, Linn. Gen. 1097. (EEL-GRASS.)

(2209.) **V. spiralis,** Linn. Hook. Fl., II., 192.

V. Americana, Michx. Fl. II., 220. Pursh, Fl. II., 602.

Not uncommon in slow-flowing rivers and shallow borders of lakes. Its range is rather wider than the last, but it is not so plentiful. In shallow water, St. Stephen, N.B. (*Fowler, Cat.*) Near Prince's Lodge, Halifax. (*Lawson.*) In a small lake near North Sydney, Cape Breton Island. (*Macoun.*) St. Lawrence River, near Point St. Charles, Montreal, 1821. (*Dr. Holmes.*) Common at Ottawa. (*Fletcher, Fl. Ott.*) St. Lawrence, and everywhere common in streams inland and north-

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ward from Prescott and Brockville. (*Billings.*) Common in the Bay of Quinte, and in all the streams and lakes discharging into it; Scugog River, at Lindsay, Ont. (*Macoun.*) Vicinity of Hamilton, Ont. (*Buchan.*) Kingston, Ont. (*Burgess.*) North shore of Lake Superior. (*Agassiz.*) Gore Bay, Vermont Harbor, Manitoulin Islands. (*J. Bell.*)

CIII. ORCHIDACEÆ. (Orchid Family.)

587. MICROSTYLIS, Nutt. Gen. II., 196.

(2210.) **M. monophyllos,** Lindl. Gen. Orch. 19. Hook. Fl. II., 193.

M. brachypoda, Gray. Ann. Lyc., New York, III., 228.
Tipularia discolor, Beck, Bot. 350.

Occasional in rather damp, shady woods, but nowhere common. Little Rocher, N. B. (*Fowler's Cat.*) Halifax, and Bedford, N. S. (*Lawson & Sommers.*) South West Point, Anticosti; along high cliffs, Gaspé coast, near Ste. Anne des Monts. (*Macoun.*) Near Montreal. (*Goldie.*) Mer Bleue, Ont., and Hull, Q., near Ottawa. (*Fletcher, Fl. Ott.*) In rich woods, not common at Rivière du Loup, Q. (*Thomas.*) Cacouna, River St. Lawrence, Q.; also in Peter's Swamp, London, Ont. (*Burgess.*) In swampy thickets near Castleton, cedar swamp, near Wooler, and two miles south of Picton, Ont.; in wet woods along Lake Winnipegoosis, Man. (*Macoun.*)

(2211.) **M. ophioglossoides,** Nutt. Gen. II. 196. Hook. Fl. II. 193.

Malaxis unifolia, Michx., Fl. II., 157.
M. ophioglossoides, Pursh, Fl. II., 592.

Newfoundland. (*Dr. Morrison.*) In several places in Kent Co., N.B., at Fredericton, Eel River and Grand Lake. (*Fowler, Cat.*) Near Bedford and at Halifax, N.S. (*Lawson & Sommers.*) Very abundant in wet meadows at Louisburg, and at North Sydney, Cape Breton Island; River de Brig, Anticosti. (*Macoun.*) Dry hills, Huckleberry Rapids, Rivière Rouge, Q. (*D'Urban.*) Dow's Swamp and other places near Ottawa. (*Fletcher, Fl. Ott.*) Sandy soil near Castleton and Belleville, Ont.; shady woods along Lake Winnipegoosis, Man. (*Macoun.*) North shore of Lake Superior. (*Agassiz.*) Canada to the Saskatchewan. (*Hooker, Fl.*)

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(2212.) **M. diphyllos,** Lindl., Gen. Orch. 19. Hook. Fl. II., 193.

Ounalashka. (*Rothr. Alask.*)

588. LIPARIS, Richard. (TWAYBLADE.)

(2213.) **L. Læselii,** Richard. Hook. Fl. II., 194.

Malaxis liliifolia, Richard. Pursh, Fl. II., 592 in part.

In wet springy places, or on hummocks in swamps; local but not rare. In a boggy meadow near Annapolis, N.S. (*Macoun & Burgess.*) Bog, Dalhousie, N.B. (*Chalmers.*) Harris Cove, Lily Lake, St. Stephen, Fredericton, Grand Lake, Kennebeccasis and Eel rivers, N.B. (*Fowler, Cat.*) Savanne, near Montreal, 1821. (*Dr. Holmes.*) In rich woods, not common at Rivière du Loup, Q. (*Thomas.*) Dow's Swamp, swamp east of Beechwood, and other localities at Ottawa, not uncommon. (*Fletcher, Fl. Ott.*) Wet swamp east of Belleville, and on logs in a pond, Oak Hills, Hastings Co.; also on logs in a swamp near Campbellford, Northumberland Co., Ont. (*Macoun.*) Peat bogs near London, Ont. (*Burgess.*) Canada to Carleton House Fort, Saskatchewan. (*Hooker, Fl.*)

589. CALYPSO, Salisb. (CALYPSO.)

(2214.) **C. borealis,** Salisb. Hook. Fl. II., 195. Pursh Fl. II., 593.

On moss in deep, shady woods, from the Atlantic to the Pacific. Nova Scotia. (*Menzies.*) Rather common in shady woods, having been detected by many collectors in N.B. (*Fowler's Cat.*) Dalhousie, N.B. (*Chalmers.*) Jupiter River, Anticosti; cool woods, Gaspé Basin. (*Macoun.*) Along the River Ste. Anne des Monts, Q. (*Porter.*) Common in rich woods at Rivière du Loup, Q. (*Thomas.*) Vicinity of Montreal, 1822. (*Dr. Holmes.*) Rather rare, vicinity of Ottawa. (*Fletcher, Fl. Ott.*) At Belleville in dry cedar swamps, and numerous other places in central Ontario; also woods on Pie Island, Lake Superior, and around Lake Nipigon. (*Macoun.*) Shore of Lake Medad, near Hamilton, Ont. (*Logie.*) Mossy bogs, Owen Sound, Ont. (*Burgess.*) Lake Mistassini, N.E.T., to the northern end of Lake Winnipeg; very local. (*J. M. Macoun.*) Moose Factory, James Bay. (*Cottar & Dr. Hayden.*) Extremely rare in the Rocky Mountains, only noticed at Donald,

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Columbia Valley; abundant in all shady woods in British Columbia and Vancouver Island. (*Macoun.*) Dean or Salmon River, B.C. Cassar Trail, 36 miles west of Dease Lake, B.C. (*Dawson.*) Sitka. (*Rothr. Alask.*) Canada to Bear Lake River; also from Hudson Bay to the Rocky Mountains. (*Hooker, Fl.*)

590. APLECTRUM, Nutt. Gen. II., 197. (PUTTY-ROOT.)

(2215.) **A. hyemale,** Nutt. Hook. Fl. II., 194.

Cymbidium hyemale, Pursh, Fl., II., 593.
Corallorhiza hiemalis, Nutt., Journ. Acad. Phil. III., 139.

Rather rare in rich woods. Beechwood, near Ottawa. (*Lt. Col. Wm. White.*) Miriwin's woods, near Prescott, Ont. (*Billings.*) Wm. Anderson's woods, Prince Edward Co., woods near Belleville, Hastings Co., and in Simon Terrill's woods, Brighton, Northumberland Co., Ont. (*Macoun.*) Rich woods, not common near London, Ont. (*Burgess.*) Mandannin, Lambton Co., Ont. (*J. Morrison, Jr.*) Between Norway House and Cumberland House, on the Saskatchewan River. (*Hooker Fl.*)

591. CORALLORHIZA, R. Br. (CORAL-ROOT.)

(2216.) **C. innata,** R. Br. Hook. Fl. II., 194.

C. verna, Nutt. Journ. Acad. Phil. III., 136.

Rather rare, but widely distributed, being found in deep cool woods from the Atlantic to the Pacific. Newfoundland. (*Miss Brenton.*) New Harbor, Newfoundland. (*Rev. A. Waghorne.*) Windsor, Pictou, Truro, Strait of Canso, Guysboro Co., N. S. (*Sommers, Cat.*) North Woods, Annapolis, N.S. (*Macoun & Burgess.*) Black River, in Northumberland Co., Carleton and Andover, N.B. (*Fowler, Cat.*) Rich woods, Rivière du Loup, Q. (*Thomas.*) Table Top Mountain, Gaspé, Q. (*Porter.*) Savanne, near Montreal, 1821. (*Dr. Holmes.*) Dow's and other swamps near Ottawa. (*Fletcher Fl. Ott.*) Woods west of Prescott Junction, Ont. (*Billings.*) Prince's Island, Hamilton, Ont. (*Logie.*) Big Swamp, Murray, and at Castleton, Northumberland Co.; woods at Kakabeka Falls and on Pie Island, Lake Superior, also at Lake Nipigon, Ont., and at Manitoba House, Lake Manitoba, Man. (*Macoun.*) Lake Mistassini, N.E.T.; Beren's River, Man., and Missinaibi River,

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Ont. (*J. M. Macoun.*) In swamps at the Kananaskis, close to Bow River, Rocky Mountains; Telegraph Trail, B.C.; slope of Mount Arrowsmith, Vancouver Island, alt. 3,500 feet. (*Macoun.*) Dean or Salmon River, B.C. Upper Liard River, lat. 61°, N.WT. (*Dawson.*) Kotzbue Sound and Ounalaska. (*Rothr. Alask.*) Lake Huron; throughout Canada to the Saskatchewan River. (*Hooker, Fl.*) Greenland. (*Lange.*)

(2217.) **C. odontorhiza,** Nutt. Journ. Acad. Phil. III. 137.

C. Wisteriana, Conrad. Journ. Acad. Phil. VI., 145.
Cymbidium Odontorhizon, Pursh, Fl. II., 593.
Ophrys corallorhiza, Michx., Fl. II., 158.

The occurrence of this plant in any part of Canada, except in south-western Ontario, is still a matter of doubt, as all the specimens hitherto supposed to be this species, except from that district, have proved to be *C. innata.* Three-mile House woods, near Halifax, N.S. (*Sommers.*) Woods along Lake Erie, Norfolk Co., Ont. (*Dr. Nichol.*) Papineau woods, near Montreal, 1822. (*Dr. Holmes.*) Vicinity of Hamilton, Ont. (*Buchan.*)

2218. **C. multiflora,** Nutt. Journ. Acad. Phil. III., 138. Hook. Fl. II., 194.

C. innata, Nutt. Gen. II., 194.

Rich, shady woods, extending from the Atlantic to the Pacific. New Harbor, Newfoundland. (*Rev. A. Waghorne.*) Halifax, N.S. (*Sommers.*) North Woods, near Annapolis, N.S. (*Macoun & Burgess.*) Campbellton, N. B. (*Chalmers.*) Rather common in Kent Co., also at St. John, N.B. (*Fowler, Cat.*) Rich woods, Rivière du Loup, Q. (*Thomas.*) Beechwood and other places near Ottawa. (*Fletcher, Fl. Ott.*) Vicinity of Hamilton, Ont. (*Buchan.*) Woods, common at Prescott, Ont. (*Billings.*) Under evergreens in woods at Castleton, Seymour, Brighton, Picton, and Belleville, also at Owen Sound, the Pic and Nipigon rivers, and along the east shore of Lake Nipigon, Ont. (*Macoun.*) Woods, not common, London, Ont. (*Burgess.*) Owen Sound and Cockburn Islands, Georgian Bay. (*J. Bell.*) North shore of Lake Superior. (*Agassiz.*) On mountain slopes among hemlock, at Six Mile Creek, in the Selkirk Mountains, B.C. (*Macoun.*) Mountain slopes Crow Nest Pass, Rocky Mountains. (*Dawson.*) Woods near Cedar Hill, Vancouver Island. (*Fletcher.*) On the flanks of Mount Finlayson, also in woods at Nanaimo and Qualicum, Vancouver Island. (*Macoun.*) Flowering in May while *Mertensiana* is only in full flower in July.

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(2219.) **C. Mertensiana,** Bong. Veg. Sitcha, 47; Hook. Fl. II., 194.

Coniferous woods west of the Rocky Mountains; Telegraph Trail, B.C.; woods around Mount Finlayson, and very abundant on the flanks of Mounts Arrowsmith and Mark, and on the portage from Qualicum to Alberni, Vancouver Island. (*Macoun.*) Vicinity of Victoria, B.C. (*Fletcher.*) Salmon River, B.C.; also Queen Charlotte Islands. (*Dawson.*) Sitka. (*Rothr. Alask.*)

(2220.) **C. striata,** Lindl. Orch. 534.

C. Macraei, Gray. Man. Ed. V., 510, Macoun's Cat., No. 1799.

Very local and very rare, though it has a wide range. Caledonia Springs, Ont. (*Macrae.*) Beechwood, Ottawa. (*Fletcher, Fl. Ott.*) Renfrew, Ont. (*Rev. C. J. Young.*) Rocky woods along North River, about four miles above Round Lake, Peterboro Co., Ont., also on the top of the high bank below the C.P.R. bridge, Nipigon River. (*Macoun.*) Woods, London, very rare, and at Parry Sound, Ont. (*Burgess.*) North shore of Lake Superior. (*Agassiz.*) Sooke, Vancouver Island. (*Fletcher.*) In a swamp at the Kananaskis, Bow River Pass and at the summit of the Selkirk Mountains, B.C. Not uncommon at Oak Bay and in woods around Cedar Hill, Vancouver Island. (*Macoun.*)

592. LISTERA, R. Br. (TWAYBLADE.)

(2221.) **L. cordata,** R. Br. Hook. Fl. II., 204.

Ophrys cordata, Michx. Fl. II., 158.

Not uncommon in cool woods from the Atlantic to the Pacific. Newfoundland and Labrador. (*Dr. Morrison.*) Pictou, N.S., and Cape Breton Island. (*McKay.*) Truro, N.S. (*Lyndsay.*) North Mountain near Annapolis, and Pirate's Cove, Gut of Canso, N.S.; also woods North Sydney, Cape Breton Island. (*Macoun & Burgess.*) Kouchibouguac and Dorchester, N.B. (*Fowler, Cat.*) Bald Mountain, Tobique River, N.B (*Hay.*) Portland, N.B. (*Matthews.*) Ste. Anne des Monts River, Gaspé, Q. (*Porter.*) Rich woods, Rivière du Loup, Q. (*Thomas.*) Swamp at the foot of the Oak Hills, Hastings Co., also in a swamp near Owen Sound, Ont.; very abundant in woods north of Otter Head, and at Current River, Lake Superior; One-mile portage Nipigon River, and Logan's Island, Lake Nipigon. (*Macoun.*) Lake Mistassini, N.E.T. (*J. M. Macoun.*) Common in mountain woods from Silver City through the mountains to the coast, and common everywhere in

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cool woods on Vancouver Island. (*Macoun.*) Salmon River, and Iltasyouco River, B.C. (*Dawson.*) Ounalaska. (*Rothr. Alask.*) Lake Winnipeg to the Saskatchewan, and from the Straits of De Fuca to Alaska. (*Hooker, Fl.*) Greenland. (*Lange.*)

(2222.) **L. convallarioides,** Nutt. Hook. Fl. II., 204.

L. Eschscholziana, Cham. Linnæa III., 33.
Epipactis convallarioides, Pursh, Fl. II., 591.

Not very common but extending from the Atlantic to the Pacific through the cool forest region. Dalhousie, N. S. (*McKay.*) North Mountain, near Annapolis, N.S., and in damp woods at Whycocomagh, Cape Breton Island. (*Macoun & Burgess.*) On the brink of a densely shaded brook, near the Manse, Bass River, Upper St. John and Madawaska rivers, also near Campellton, N.B. (*Fowler, Cat.*) Dalhousie, N.B. (*Chalmers.*) Nashwaaksis, N.B. (*Vroom.*) Woods along the Gaspé coast and in woods up the Ste. Anne des Monts River, Gaspé, Q. (*Macoun. Porter.*) Rich woods, Rivière du Loup, Q. (*Thomas.*) Hilton, near Owen Sound, and Cockburn Harbor, Georgian Bay. (*J. Bell.*) Opposite Grand Island, Lake Superior. (*R. Bell.*) Shore of Lake Huron, near Wiarton, woods near Current River, along the north-east coast, and on Pie Island, Lake Superior; in wet woods along Lake Winnipegoosis, Man. (*Macoun.*) Lake Mistassini, N.E.T. (*J. M. Macoun.*) Oxford House, Keewatin. (*R. Bell.*) Common in the Rocky Mountains, from the Kananaskis to Donald on the Columbia; abundant on the mountains on Vancouver Island and at Cameron and Horne Lakes. (*Macoun.*) Ounalaska. (*Rothr. Alask.*) Near Quebec and Lake Huron; also in shady woods in mountain swamps at the base of the Rocky Mountains; on the north-west coast at Clarence Straits and Ounalaska. (*Hooker, Fl.*)

593. SPIRANTHES, Richard. (LADIES TRESSES.)

(2223.) **S. latifolia,** Torr. Gray, Man. Ed. V., 504.

S. plantaginea, Torr. Fl. N. York, II., 284.

Occasionally in damp, grassy places. Titusville, Andover, North Mountain, Tobique and Eel rivers, N.B. (*Fowler, Cat.*) Windsor, N.S. (*Howe.*) Halifax, N.S. (*Sommers.*) In a marshy meadow at Belleville; rich, moist woods at Niagara Falls, Ont. (*Macoun.*) Gravelly river flat, London; Southampton, Ont. (*Burgess.*)

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(2224.) **S. Romanzoviana,** Chamisso.

S. cernua, Rich. Hook. Fl. II., 202 in part.

Not uncommon on wet sand or in bogs, along rivers and lakes from the Atlantic to the Pacific. Brigus, Newfoundland. (*R. Bell.*) New Harbor, Newfoundland. (*Rev. A. Waghorne.*) Pictou, Truro and Sandpoint, N.S.; Whycocomagh, Cape Breton. (*Sommers, Cat.*) Siscomb River, Guysboro Co., N.S. (*Faribault.*) Magdalen Islands. (*Richardson.*) Kouchibouguac, Richibucto, Campbellton, King's and St. John's Co's., N.B. (*Fowler, Cat.*) South West Point, Anticosti; Big Swamp, Murray, shore of Lake Ontario at Presqu'ile Point, also shore of Lake Huron at Red Bay, Ont. (*Macoun.*) Sault Ste. Marie. (*Mrs. Saunders.*) Lake Mistassini, N.E.T., and on Charlton Island, James Bay. (*J. M. Macoun.*) God's Lake, N. E. of Lake Winnipeg (*R. Bell.*) Bow River valley at Calgary, and rather common in sand along the Bow River at Silver City, Rocky Mountains; also in Beaver Creek valley, at Six Mile Creek, Selkirk Mountains; common at Cedar Hill, near Victoria, and at Horne Lake and Alberni, Vancouver Island. (*Macoun.*) New Westminster, B.C. (*Fletcher.*) Queen Charlotte Islands. (*Dawson.*) Ounalaska. (*Rothr. Alask.*) Bartlett Bay, Alaska. (*Meehan.*)

(2225.) **S. cernua,** Richard. Hook. Fl. II., 202, in part.

Neottia cernua, Pursh, Fl. II., 589.
Ophrys cernua, Michx., Fl. II., 158.

The limits of this and the preceding species are not very well defined, and references to this form may in reality belong to the next. Dartmouth and Halifax, N.S. (*Lawson & Sommers.*) Pictou, N.S. (*McKay.*) Wet places, Caledonia, Guysboro Co., N.S. (*Faribault.*) Lobster Bay; Long Point, Mingan, Q. (*St. Cyr.*) In the neighborhood of bogs, Rivière du Loup, Q. (*Thomas.*) Côte St. Paul, near Montreal, 1821. (*Dr. Holmes.*) Lake Flora, Hull, Q. (*Fletcher, Fl. Ott.*) Moist ground west of Prescott, Ont. (*Billings.*) The Dell, Ancaster, near Hamilton, Ont. (*Logie.*) Boggy meadow near the Hop Yard, Belleville, Ont. (*Macoun.*) Peter's Swamp, near London, Ont. (*Burgess. Millman.*) Drummond Island and McLeod's Harbor, Georgian Bay. (*J. Bell.*)

(2226.) **S. gracilis,** Bigelow. Hook. Fl. II., 202.

Open woods and grassy slopes, not uncommon, but local. Windsor, Halifax, Pictou, Truro and at Oyster Ponds, Guysboro Co., N.S. (*Sommers, Cat.*) Abundant along the railway cuttings at Truro, N.S. (*Macoun.*) Roadside, Pictou, N.S. (*Burgess.*) Caledonia, Guysboro

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Co., N.S. (*Faribault.*) Baie Verte and Petitcodiac, N.B. (*Fowler, Cat.*) Lobster Bay; Little River, Mingan, Q. (*St. Cyr.*) Aylmer, Q. (*Fletcher, Fl. Ott.*) Rocky woodlands west of Brockville, Ont. (*Billings.*) Sandy soil in woods, valley of the Humber, Toronto. (*Burgess.*) Sandy plains at Castleton, Ont.; also along Lake Huron, at Red Bay, and abundant in swamps along White River, north of Lake Superior, and also at Rainy Lake, Ont. (*Macoun.*) Observation Point, Lake Winnipeg. (*J. M. Macoun.*) From Lake Huron to Fort Franklin, on the Mackenzie River. (*Hooker, Fl.*)

A, R. Br. (RATTLESNAKE-PLANTAIN.)

(2227.) **C. repens,** R. Br. Hook. Fl. II., 203.

Neottia repens, Pursh, Fl. II., 589.
Satyrium repens, Michx., Fl. II., 157, in part.

Rather common in cool mossy woods, from the Atlantic to the Pacific. Pictou, N.S. (*McKay.*) Pirate Cove and Annapolis, N.S. (*Burgess & Macoun.*) Very common throughout the forests of New Brunswick. (*Fowler, Cat.*) St. Mary's River and other points, Anticosti; also woods along the Gaspé coast, Q. (*Macoun.*) Slopes of Mount Albert, Gaspé. (*Porter.*) Vicinity of Quebec and Island of Orleans, Q. (*Thomas.*) Stewarton, near Ottawa, and Eastman's Springs, Ont. (*Fletcher, Fl. Ott.*) Cedar swamps throughout all the northern counties of Ontario and extending westerly to the Lake of the Woods. (*Macoun.*) Blood River, Lake Winnipeg, and abundant between that lake and Lake Mistassini. (*J. M. Macoun.*) Between Pine River and Dunvegan, Peace River. (*Dawson.*) Not uncommon in northern Manitoba and in the foot-hills of the Rocky Mountains, at the Kananaskis. (*Macoun.*) Mountain woods of the Rocky Mountains, and from the Saskatchewan to Fort Franklin. (*Hooker, Fl.*)

(2228.) **C. pubescens,** R. Br. Hook., Fl. II., 204.

Neottia pubescens, Pursh, Fl. II., 590.
Satyrium repens, Michx., Fl. II., 157, in part.

Rather rare. Always prefers dry woods in Ontario. Newfoundland. (*Miss Brenton.*) New Harbor, Newfoundland. (*Rev. A. Waghorne.*) Salmon River, Truro, and Canso, Guysboro Co. (*Sommers, Cat.*) The above references probably belong to the preceding species. (*Macoun.*) Petitcodiac, N.B. (*Fowler, Cat.*) Tobique Lake, N.B. (*Hay.*) Ste. Anne de la Pèrade, Q. (*St. Cyr.*) Gravelly and rich woods, Sey-

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mour, Northumberland Co.; Belleville, and near the Oak Hills, Hastings Co., Ont. (*Macoun.*) Sulphur Spring, Ancaster, Ont. (*Logie.*) St. Joseph Island, Gore, Bay, and Thompson Point, north of Lake Huron. (*J. Bell.*) Opposite Grand Island, Lake Superior; on good soil. (*R. Bell.*) Rich woods, London, and Parry Sound, Ont. (*Burgess.*) North shore of Lake Superior. (*Agassiz.*)

(2229.) **G. Menziesii,** Lindl. Orchid., 492.

Spiranthes decipiens, Hook., Fl. II., 203.

Rich woods, taking the place of *G. pubescens* west of Lake Huron. Lake Huron. (*Goldie.*) Lake Simcoe, Ont. (*Drummond.*) Manitoulin Island. (*Mrs. Saunders.*) Woods, Manitoulin Islands, and at Parry Sound, Ont. (*Burgess.*) Rather common along Beaver Creek, Selkirk Range; also abundant in all evergreen woods throughout Vancouver Island. (*Macoun.*) Flathead River, B.C., and Queen Charlotte Islands. (*Dawson.*) Near the sources of the Columbia River, Rocky Mountins. (*Drummond.*)

595. ARETHUSA, Linn. Gen. 1014. (ARETHUSA.)

(2230.) **A. bulbosa,** Linn. Hook., Fl. II., 201; Pursh, Fl. II., 590.

Peat bogs, common eastward. Newfoundland. (*Cormack.*) New Harbor, Newfoundland. (*Rev. A. Waghorne.*) Halifax and Mahone Bay, Lunenburg Co., N.S. (*Sommers, Cat.*) Peat bog, North West Arm, Halifax, N.S.; also in a bog at North Sydney coal mine, Cape Breton. (*Macoun & Burgess.*) Glenelg, Guysboro Co., N.S. (*Faribault.*) Richibucto, Fredericton, Norton, Chipman, and Musquash, N. B. (*Fowler, Cat.*) St. Stephen, N.B. (*Vroom.*) Very rare in Gomin's woods and swamp near Quebec. (*Thomas.*) Swamp at Three Rivers, Q., 1822. (*Dr. Holmes.*) Mer Bleue, near Ottawa. (*Fletcher, Fl. Ott.*) Big swamp, Murray, Northumberland, Co., Ont. (*Macoun.*) Mossy bogs, Westminster Ponds, London, Ont. Very rare. (*Burgess.*)

596. CALOPOGON, R. Br. (CALOPOGON.)

(2231.) **C. pulchellus,** R. Br. Hook., Fl. II., 202.

Cymbidium pulchellum, Pursh, Fl. II., 592.
Limodorum tuberosum, Michx., Fl. II., 159.

Peat bogs, not common. Newfoundland. (*Miss Brenton.*) New Harbor, Newfoundland. (*Rev. A. Waghorne.*) Halifax, Pictou and

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Mahone Bay, N.S.; Cape Breton. (*Sommers, Cat.*) Abundant in a peat bog at North Sydney Mine, Cape Breton. (*Macoun & Burgess.*) Smith's bog, Guysboro Co., N.S. (*Faribault.*) Magdalen Islands. (*McKay.*) Peat bogs, Richibucto, Kouchibouguac, and Day's mills, N.B. (*Fowler, Cat.*) St. Henri, Lévis Co., Q. (*St. Cyr.*) Common at Quebec, in Gomin's woods. (*Thomas.*) Abundant in bogs near the Indian village, Rivière Rouge, Q. (*D'Urban.*) Savanne, near Montreal, 1821. (*Dr. Holmes.*) Bogs; abundant in the vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Bay, west of Prescott Junction, Ont. (*Billings.*) Big swamp, Murray, Northumberland Co.; border of a lake near Marmora village, and in a swamp, Huntingdon, North Hastings; also shore of Lake Huron, at Chicken Bay, Ont. (*Macoun.*) Westminster Ponds and mossy bogs, London, Ont. (*Burgess. Millman.*)

597. POGONIA, Juss. Gen. 65. (POGONIA.)

(2232.) **P. ophioglossoides,** Ker., Bot. Reg. 148. Hook., Fl. II., 201.

Arethusa ophioglossoides, Pursh, Fl. II., 590; Michx., Fl. II., 159.

Peat bogs, not common in Ontario. Newfoundland. (*Dr. Morrison.*) New Harbor, Newfoundland. (*Rev. A. Waghorne.*) Halifax, Pictou and Mahone Bay, N.S.; Cape Breton. (*Sommers, Cat.*) In a peat bog at North Sydney Mine, Cape Breton. (*Macoun.*) Scarce about Richibucto and Fredericton; abundant at Tomlinson's Lake; at Clifton, Andover, and Tay's mills, N.B. (*Fowler, Cat.*) St. Charles, Bellechasse Co., Q. (*St. Cyr.*) In a swamp at Three Rivers, Q., 1822. (*Dr. Holmes.*) Common in bogs near the Indian Village, Rivière Rouge, Argenteuil Co., Q. (*D'Urban.*) Rare at Quebec, in Gomin's woods. (*Thomas.*) Peat bogs, vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Big swamp, Murray, Northumberland Co.; swamp, Dummer, Peterboro Co., and at Hooper's Lake, North Hastings; swamp and marsh at Chicken Bay, Lake Huron. (*Macoun.*) Bog at Millgrove, near Hamilton, Ont. (*Logie.*) Westminster Ponds, London Ont. (*Saunders. Millman.*) Mossy bogs, London and Parry Sound, Ont. (*Burgess.*)

(2233.) **P. pendula,** Lindl. Hook., Fl. II., 202.

Triphora pendula, Nutt., Gen. II., 193.
Arethusa pendula, Pursh, Fl. II., 590.
A. parviflora, Michx., Fl. II., 160.

Damp woods, Canada. (*Goldie* vide *Hooker.*) We have never seen a Canadian specimen of this species. It should be looked for in south western Ontario.

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(2234.) **P. verticiliata,** Nutt. Gen. II., 192.

Arethusa verticillata, Pursh, Fl. II., 591.
A. medeoloides, Pursh, Fl. II., 591.

Low damp woods, Komoka, Ont.; rare. (*Burgess. Millman.*)

598. EPIPACTIS, R. Br.

(2235.) **E. gigantea,** Dougl. Hook., Fl. II., 202.

E. Americana, Lindl., Orchid. 462.

Under evergreens, at Osoyoos Lake, B.C. (*Dawson.*)

599. ORCHIS, Linn. Gen. 1009. (ORCHIS.)

(2236.) **O. spectabilis,** Linn. Hook., Fl. II., 195; Pursh, Fl. II. 587.

O. humilis, Michx., Fl. II., 155.

Rich low woods, rather rare. Keswick, and at Eel River, Carleton Co., N.B. (*Fowler, Cat.*) Gomin's wood, Quebec. (*St. Cyr.*) Vicinity of Montreal, 1821. (*Dr. Holmes.*) Stewart's bush and other localities near Ottawa, not uncommon. (*Fletcher, Fl. Ott.*) Miriwin's woods and elsewhere around Prescott, Ont.; common. (*Billings.*) Rich woods near Belleville, Hastings Co.; also at Castleton and Campbellford, Northumberland Co., Ont. (*Macoun.*) Vicinity of Hamilton. (*Logie.*) Rich woods, London, Ont. (*Burgess. Millman.*)

(2237.) **O. aristata,** Fisch. Hook., Fl. II., 195.

O. latifolia, Linn. Rothrock's Alaskan Plants, 456.

Ounalashka. (*Chamisso* vide *Hooker.*)

(2238.) **O. rotundifolia,** Gray, Amer. Journ. Sci. CXIV., 72. Pursh, Fl. II., 588.

Habenaria rotundifolia, Rich. Gray, Man. Ed. V., 500, Macoun, Cat., No. 1773.
Platanthera rotundifolia, Lindl. Orchid. 286.

Occasionally met with in peat bogs; commoner westward. Rivière de Brig, Anticosti. (*Macoun.*) In damp woods near Rivière du Loup, Q. (*Thomas.*) Mingan Islands, Q. (*St. Cyr.*) Very abundant in the big swamp, Murray, Northumberland Co., Ont. Dow's swamp, near Ottawa. (*Fletcher, Fl. Ott.*) Lake Mistassini, N.E.T.; also South

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Twin Island, James Bay. (*J. M. Macoun.*) Moose Factory, James Bay. (*Cottar & Dr. Hayden.*) Lake Winnipeg. (*Back.*) Slopes of Cypress Hills, Alberta. (*J. M. Macoun.*) Damp woods, Lake Winnipegoosis; in the foot-hills at Morley and westward to Silver City, Rocky Mountains; also in a bog on the Rocky Mountain Portage, Peace River Cañon, lat. 56°, and at McLeod's Lake, B.C., lat. 55°. (*Macoun.*) Banff, Rocky Mountain. (*Prof. Fowler.*) Between Fort Churchill and York Factory, Hudson Bay. (*Dr. Rae.*) Greenland. (*Lange.*)

600. HABENARIA, Willd. Spec. IV., 44. (REIN-ORCHIS.)

(2239.) **H. tridentata,** Hook., Ex. Fl. 81.

Platanthera tipuloides, Lindl., Orchid, 285.
Gymnadenia (?) tridentata, Lindl. Hook., Fl. II., 195.
Orchis tridentata, Pursh, Fl. II., 586.
O. clavellata, Michx., Fl. II., 155; Pursh, Fl. II., 586.

Peat bogs and borders of lakes. Newfoundland. (*Miss Brenton.*) New Harbor, Newfoundland. (*Rev. A. Waghorne.*) Brigus, Newfoundland. (*R. Bell.*) Windsor, Halifax, Pictou, Truro, and Straits of Canso, N.S. (*Sommers, Cat.*) Caledonia, Guysboro Co., N.S. (*Faribault.*) Wet slopes, Baddeck, Cape Breton. (*Macoun.*) Common in Kent Co.; also St. John Co., N.B. (*Fowler, Cat.*) Black Lake, on King's Mountain, Chelsea, P.Q.; rare. (*Fletcher, Fl. Ott.*) Border of Hooper's Lake, North Hastings; tamarac swamp near Norah's Lake, Victoria Co., Ont. (*Macoun.*) Border of the marsh at Millgrove, near Hamilton, Ont. (*Logie.*) Mossy bogs, London and Parry Sound, Ont. (*Burgess.*) Opposite Grand Island, Lake Superior. (*R. Bell.*) Lake Huron. (*Hooker, Fl.*)

(2240.) **H. virescens,** Spreng. Gray, Man. Ed. V., 499.

Platanthera flava, Gray. Sill. Journ. XXXVII., 308.
P. herbiola, Lindl. Hook., Fl. II., 197.
Orchis fuscescens, Pursh, Fl. II., 587.

Wet places along Crow River at Marmora, Hastings Co.; on Ship Island, Gull Lake, Victoria Co., Ont.; also eleven miles up the Kaministiqua River, Thunder Bay. (*Macoun.*) Prince's Island, near Hamilton, Ont. (*Logie.*) In low ground, London; rare; also on Moon River, Muskoka, Ont. (*Burgess.*) Between Norway House and Canada. (*Hooker, Fl.*)

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(2241.) **H. bracteata,** R. Br., Hort. Kew. (Ed. 2) V., 192.

H. viridis, R. Br., Var. *bracteata*, Reichenbach, Macoun, Cat. No. 1775.
Peristylis bracteatus, Lindl. Hook., Fl. II., 201.
Orchis bracteata, Pursh, Fl. II., 587.

In grassy woods and meadows. Taborville, Petitcodiac, Havelock, and Tobique Forks, N. B. (*Fowler, Cat.*) Common in woods at Rivière du Loup, Q. (*Thomas.*) Island of Orleans. (*St. Cyr.*) Swamps and by rivers, near Montreal, 1821. (*Dr. Holmes.*) Observed in several places along the Rivière Rouge, Argenteuil Co., Q. (*D'Urban.*) Not uncommon near Ottawa. (*Fletcher, Fl. Ott.*) Moist thicket west of Prescott Junction, Ont. (*Billings.*) Occasional all over the counties of Prince Edward, Hastings, and Northumberland, Ont., but never abundant. (*Macoun.*) Mountain near Hamilton, Ont. (*Logie.*) Low woods, London, Ont.; also at Emerson, Man. (*Burgess. Millman.*) Rather common in many places on the Great Plains, extending to Canmore, in the Rocky Mountains and appearing again at Donald, Columbia Valley; along the Telegraph Trail, lat. 55°, B.C.; also occasionally met with near Victoria and Goldstream, Vancouver Island. (*Macoun.*) Calgary, Alberta. (*Prof. Fowler.*) Sitka and Ounalaska. (*Roth. Alask.*) Lake Winnipeg. (*Back.*) From Lake Huron to the Saskatchewan, and to swamps in the Rocky Mountains. (*Hooker, Fl.*)

(2242.) **H. Chorisianus,** Lindl.

Platanthera Chorisianus, Lindl. Hook., Fl. II., 201.

Ounalashka. (*Hooker, Fl.*)

(2243.) **H. hyperborea,** R. Br. Rich., App. II., 33.

Platanthera hyperborea, Lindl. Hook., Fl. II., 197.
P. Huronensis, Lindl. Hook., Fl. II., 198.
P. Kōnigii, Lindl. Hook., Fl. II., 197.
Orchis hyperborea, Pursh, Fl. II., 588.

Abundant in bogs, and extending from the Atlantic to the Pacific. Newfoundland. (*Miss Benton.*) New Harbor, Newfoundland. (*Rev. A. Waghorne.*) Labrador. (*Butler.*) Harris Cove, Andover, and Upper St. John, N.B. (*Fowler, Cat.*) Campbellton, N. B. (*Chalmers.*) Peat bog, Salt Lake, Anticosti. (*Macoun.*) Common in woods at Rivière du Loup, Q. (*Thomas.*) Island of Orleans, Q. (*St. Cyr.*) Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Moist thickets, east of Prescott, Ont. (*Billings.*) Peat bogs and swamps, general throughout central Ontario. (*Macoun.*) Sulphur spring, Ancaster, near Hamilton, Ont. (*Logie.*) Wet shady woods, London, and Southampton, Ont. (*Burgess.*) St. Joseph's Island, Drummond Island, and Thompson's

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Point, Georgian Bay. (*J. Bell.*) Abundant around Lake Superior and along the Dawson route to the Red River. (*Macoun.*) Lake Mistassini, N.E.T.; Severn River, Keewatin; Charlton Island and "The Twins," James Bay. (*J. M. Macoun.*) Moose Factory, James Bay. (*Cottar & Hayden.*) Between Lake Winnipeg and York Factory. (*R. Bell.*) Cypress Hills and Calgary, Alberta. (*J. M. Macoun.*) Fort Ellice, Long Lake, and Hand Hills, N.W.T. (*Macoun.*) Belly River, 49th parallel, Rocky Mountains. (*Burgess. Millman.*) Crow Nest Pass, Rocky Mountains. (*Dawson.*) Abundant in swamps and mountain meadows from Morley westward through the Rocky Mountains to the Selkirk summit. (*Macoun.*) Quesnel Lake, B.C., alt. 2,200 feet, (*Bowman.*) Bartlett Bay, Alaska. (*Meehan.*) From the Saskatchewan to Fort Franklin; also Ounalashka. (*Hooker, Fl.*) Greenland. (*Lange.*)

(2244.) **H. gracilis,** Watson. Proced. Am. Acad., XII., 276.

Platanthera gracilis, Lindl. Hook., II., 198.
P. stricta, Lindl. Hook., Fl. II., 199.

North West America. (*Menzies.*) Abundant in damp woods and along wooded slopes of Mount Arrowsmith and Mount Mark, at Qualicum and Alberni, and occasionally in swamps in the interior of Vancouver Island. (*Macoun.*) Mount Finlayson, Vancouver Island. (*Fletcher.*) North West coast of America. (*Douglas.*)

(2245.) **H. sparsiflora,** Watson. Proced. Am. Acad., XII., 276.

Platanthera graminea, Lindl. Hook., Fl. II., 199.

Both this and the above species look like *H. hyperborea,* but they are easily distinguished by the spur, which in the former is saccate, and in the latter is quite long and slender. (*Macoun.*) North West coast. (*Menzies.*)

(2246.) **H. dilatata,** Gray. Ann. Lyc. N. York, III., 231.

Platanthera dilatata, Lindl. Hook., Fl. II., 198.
Orchis dilatata, Pursh, Fl. II., 588.

Rather common in bogs from the Atlantic to the Pacific. Brigus, Newfoundland. (*R. Bell.*) New Harbor, Newfoundland. (*Rev. A. Waghorne.*) Very abundant in a wet meadow at Louisburg, Cape Breton. (*Macoun & Burgess.*) Common in swamps and bogs at Kouchibouguac, Lily Lake, Campbelton, Tobique and Eel rivers, Chipman, and between Pabineau and Grand Falls, on the Nepisiquit, N.B. (*Fowler, Cat.*) Rivière de Brig and Ellis Bay, Anticosti; also Mount Albert, Gaspé, Q. (*Macoun.*) Mingan Islands. Q. (*St. Cyr.*)

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Mountain swamp, near Montreal, 1821. (*Dr. Holmes.*) Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Rather common in swamps throughout central Ontario, and abundant around Lake Superior and on the Island of Michipicotin. (*Macoun.*) Mossy bogs, London, Ont. (*Burgess Millman.*) Drummond Island and Thompson's Point, Georgian Bay. (*J. Bell.*) Lake Mistassini, N.E.T. (*J. M. Macoun*) Moose Factory, James Bay. (*Cottar & Dr. Hayden.*) Red Deer River, and along the flanks of the Porcupine Mountain, Man.; rather common in the Rocky Mountains, from Morley westward to Hector. (*Macoun.*) South Kootanie Pass, Rocky Mountains. (*Dawson.*) Lake Lindeman, Yukon River, lat. 60°. (*Schwatka.*) Throughout Canada from Lake Huron to the Saskatchewan and Hudson Bay. (*Hooker, Fl.*)

(2247.) **H. leucostachys,** Watson. Proc. Am. Acad., XII., 276.

Platanthera leucostachys, Lindl., Fl. II., 198.

In exactly the same habitat as the preceding, but with larger, whiter and longer spurred flowers. Swamps at Donald and Beaver Creek, Columbia Valley; quite common in swamps at Victoria, Nanaimo, Alberni and Qualicum, Vancouver Island. (*Macoun.*) Tanyabunkut Lake, B.C. (*Dawson.*)

(2248.) **H. obtusata,** Rich. App. Ed. II., 33.

Platanthera obtusata, Lindl. Hook., Fl. II., 196.
Orchis obtusata, Pursh, Fl. II., 588.

Common in cool mossy woods throughout the forest region to British Columbia. New Harbor, Newfoundland. (*Rev. A. Waghorne.*) Labrador. (*Butler.*) Truro, N.S. (*Lawson.*) Coal Branch, Kent Co.; Campbellton and Bald Mountain; also St. John Co. and Tobique River, N.B. (*Fowler, Cat.*) North Sydney, Cape Breton; South West Point, Anticosti; Little Fox River, Gaspé, Q. (*Macoun.*) Summit of Mount Albert, Gaspé. (*Porter.*) Mingan Islands, Q. (*St. Cyr.*) Peat bogs, Sturgeon Point, Ont. (*Burgess.*) Bogs at Sturgeon Lake, Ont. (*Mrs. Saunders.*) St. Joseph and Drummond Islands, Georgian Bay. (*J. Bell.*) Cedar swamps at Belleville and Castleton, also at Owen Sound, Ont.; abundant at Kakabeka Falls, Current River and Pie Island; Nipigon River, and westward along the Dawson road to the Lake of the Woods. (*Macoun.*) Lake Mistassini, N.E.T.; Charlton Island and Fort George, James Bay; also Cypress Hills, Alberta. (*J. M. Macoun.*) Damp woods, Lake Winnipegoosis and Porcupine Mountain, Man.; in the foot-hills, from Morley westward through the Rocky Mountains to Donald in the Columbia valley; also at Fort McLeod, lat. 55°, B.C. (*Macoun.*) Gatcho Lake,

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B.C. (*Dawson.*) Kotzebue Sound. (*Rothr. Alask.*) Between Fort Churchill and York Factory, Hudson Bay. (*Dr. Rae.*) Nova Scotia. Cape Torment, near Quebec, west to Carleton House Fort, on the Saskatchewan and alpine swamps of the Rocky Mountains, and thence to Bear Lake and Fort Franklin; North West coast and Kotzebue Sound. (*Hooker, Fl.*)

(2249.) **H. elegans,** Bolander. Cat. Pl. San. Fran. 29.

Platanthera elegans, Lindl. Hook., Fl. II.,196.

Rich or gravelly woodlands; confined to the west coast. Flowering late. This form may be easily distinguished from the next by the *long* spur. Rather rare near Victoria, Vancouver Island, but frequent in the woods at Nanaimo and northwards to Qualicum, and Horne Lake, where it is common on gravelly soil. (*Macoun.*)

(2250.) **H. Unalaschensis,** Watson. Proc. Am. Acad., XII., 277.

H. fœtida, Watson. Bot. King Exp., V. 341; Macoun, Cat., No. 1765.
Platanthera Schischmareffiana, Lindl. Hook., Fl. II., 197.

Very rare eastward but abundant on the west coast. Open gravelly woods, Jupiter River, Anticosti; also on the Fishing Islands, Lake Huron; on gravel of a mountain torrent at the "Gap," Rocky Mountains; very abundant on Mount Finlayson and the other mountains around Goldstream, and on gravelly soil at Qualicum, and Cameron Lake, Vancouver Island. Flowering early. (*Macoun.*) Vicinity of McLeod's Lake, B.C. (*Dawson.*) Ounalashka. (*Hook. Fl.*)

(2251.) **H. Menziesii,** Lindl. Gen. Orch., 286.

Platanthera Menziesii, Lindl. Hook., Fl. II., 197.

North West coast. (*Menzies* vide *Hooker.*)

(2252.) **H. Hookeri,** Torr. Gray. Ann. Lyc. N. York, III., 229.

Platanthera Hookeri, Lindl. Hook., Fl. II., 196.
H. orbiculata, Hook. Ex. Fl. 145.

Cool and damp woodlands and borders of swamps. Windsor, Dartmouth and Elmsdale, N.S. (*Sommers, Cat.*) Pirate's Cove, N.S. (*Macoun & Burgess.*) Kouchibouguac, Kingston, Kent Co.; Grand Lake and Salmon River, also Petitcodiac, N.B. (*Fowler, Cat.*) St. Stephen, N.B. (*Vroom.*) Lake Tamiscouata, Q. (*Ami.*) Island of Orleans, Q. (*St. Cyr.*) Vicinity of Rivière du Loup, Q. (*Thomas.*) Neighborhood of Ottawa; very common. (*Fletcher, Fl. Ott.*) Moist thicket west of Prescott Junction, Ont. (*Billings.*) Damp woods, Oak Hills, Hastings Co., Ont. (*Macoun.*) Neighborhood of Hamilton,

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Ont. (*Logie.*) Komoka, Ont. (*Millman.*) Two Heart River, north of Lake Huron, and on the Michipicotin River and Oba Lake, and river north of Lake Superior. (*R. Bell.*)

Var. **oblongifolia,** J. A. Paine. This form, as its name indicates, has oblong instead of orbicular leaves. Grows in similar situations. North Mountain, Annapolis, N.S. (*Macoun.*) Campbellton, N.B. (*Chalmers.*) Chelsea Mountain, Q. (*Fletcher, Fl. Ott.*)

(2253.) **H. orbiculata,** Torr. Compend. 318.

H macrophylla, Goldie. Edin. Phil. Journ., VI., 331.
Platanthera orbiculata, Lindl. Hook., Fl. II., 196.
Orchis orbiculata, Pursh, Fl. II., 588.

Rich shady woods, not uncommon but abundant nowhere. New Harbor, Newfoundland. (*Rev. A. Waghorne.*) Halifax, Mount Dalhousie, Truro, Clam Harbor and Straits of Canso, N.S. (*Sommers, Cat.*) North Mountain, N.S. (*Burgess.*) Whycocogmah, Cape Breton. (*Macoun.*) Bass River, Loch Lomond, Nepisiquit Lakes, Eel River, Clifton and Tobique River, N.B. (*Fowler, Cat.*) River Ste. Anne des Monts, Gaspé coast. (*Macoun. Porter.*) Mountain swamp and Portage des Gres, near Montreal, 1821. (*Dr. Holmes.*) Island of Orleans. (*St. Cyr.*) Abundant in woods along the River Rouge, Argenteuil Co., Q. (*D'Urban.*) Vicinity of Ottawa; rather rare. (*Fletcher, Fl. Ott.*) Near Albion Mills, Ont. (*Logie.*) Under clumps of pines, English's woods, London, Ont. (*Saunders.*) Rich woods, Parry Sound, Ont. (*Burgess.*) Hilton, Drummond Islands, and Cockburn Island, Georgian Bay. (*J. Bell.*) Opposite Grand Island, Lake Superior. (*R. Bell.*) Woods near Belleville, and at the Oak Hills Hastings Co.; also at Castleton, Brighton, and Campbellford, Northumberland Co., Ont.; woods, Lake Nipigon and at Kakabeka Falls, near Lake Superior; Swan Lake House, and on the banks of the Red Deer River, Lake Winnipegoosis, Man.; rich woods along the Columbia River at Donald, B. C. (*Macoun.*) West to the Saskatchewan. (*Hooker, Fl.*)

(2254.) **H. ciliaris,** R. Br. Hort. Kew. (Ed. 2) V., 192.

Platanthera ciliaris, Lindl. Hook., Fl. II., 199.
Orchis ciliaris, Pursh, Fl. II., 585. Michx. Fl. II., 156.

Low sandy soil, near Leamington, Essex Co., Ont. (*Burgess.*) Canada. (*Goldie.*) Apparently very rare in Ontario.

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(2255.) **H. blephariglottis,** Torr. Compend. 317.

Platanthera blephariglottis, Lindl. Hook., Fl. II., 199.
P. holopetala, Lindl. Hook., Fl. II., 199.
Orchis blephariglottis, Pursh, Fl. II., 585.

We include the variety *holopetala* in the species as our knowledge is too limited to separate them. Peat bogs, apparently rare. Newfoundland. (*Miss Brenton.*) New Harbor, Newfoundland. (*Rev. A. Waghorne.*) Halifax and Bedford, N.S. (*Sommers, Cat.*) Bogs, Pictou Co, N.S. 1885. (*Robert.*) Kouchibouguac, Maryland road, near Fredericton; Tay's mills, York Co., and Chipman, N.B. (*Fowler, Cat.*) Island of Orleans. (*St. Cyr.*) Bogs in Gomin's woods, near Quebec. (*Thomas.*) Mer Bleue, near Ottawa. (*Fletcher, Fl. Ott.*) Peat bogs, Lake Island, Lake Joseph, Muskoka, Ont. (*Burgess.*)

(2256.) **H. leucophæa,** Gray, Man. Ed V., 502.

Orchis leucophæa, Nutt.

Caledonia, Guysboro Co., N.S. (*Faribault.*) Moist meadows and bogs, abundant at Baddeck and North Sydney, Cape Breton. (*Macoun.*) Gomin's woods, Quebec. (*Thomas.*) Island of Orleans. (*St. Cyr.*) Millgrove, near Hamilton, Ont. (*Logie.*) Mossy woods, London, Ont. (*Burgess.*)

(2257.) **H. lacera,** R. Br. Hort. Kew. (Ed. 2) V., 193.

Platanthera psycodes, Lindl. Hook., Fl. II., 200.
Orchis psycodes, Pursh, Fl. II., 585.
O. lacera, Michx., Fl. II., 156; Pursh, Fl. II., 586.

Rich damp woods, rare and local. Windsor, Halifax and Pictou, N.S. (*Sommers, Cat.*) Meadows at Baddeck, Cape Breton. (*Burgess.*) Kouchibouguac; Petitcodiac and Hampton; common between Au Lac and Port Elgin, N.B. (*Fowler, Cat.*) Rich woods near the hop yard, Belleville, Ont. (*Macoun.*) Peat bogs, Westminster Ponds, near London, Ont. (*Burgess.*)

(2258.) **H. psycodes,** Gray. Manual Ed. V., 502.

Platanthera fimbriata, Lindl. Var. β. Hook. Fl. II., 200.
P. incisa, Lindl. Hook., Fl. II., 200.
Orchis fimbriata, Pursh, Fl. II., 588.
O. incisa, Pursh, Fl. II., 589.

Moist woods and swamps, common in certain localities. Newfoundland. (*Miss Brenton.*) Windsor, Bedford, Pictou, Truro, and at the Straits of Canso, N.S. (*Sommers, Cat.*) Wet meadows at Baddeck, Cape Breton. (*Macoun.*) Common in wet meadows and bogs, Kent Co.;

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also at Norton, N.B. (*Fowler, Cat.*) Nictau Lake, N.B. (*Hay.*) Gomin's woods, near Quebec. (*Thomas.*) Point Fame and Fox River, Gaspé coast, Q. (*Macoun.*) Harbor Island, Mingan Islands; and Island of Orleans. (*St. Cyr.*) Salt Lake, Anticosti. (*Verrill.*) Swamp at Beechwood, and other places near Ottawa. (*Fletcher, Fl. Ott.*) Common at Prescott, Ont. (*Billings.*) Swamp east of Belleville, and in numerous places in North Hastings and at Marmora and Myersburg, in Northumberland Co.; also on the shore of Chicken Bay, Lake Huron, Ont. (*Macoun.*) Millgrove, near Hamilton, Ont. (*Logie.*) In swampy soil at London, Ont.; common (*Burgess. Millman*) Owen Sound, Drummond Island, Thompson's Point, and McLeod's Harbor, Georgian Bay. (*J. Bell.*) Sault Ste. Marie. (*R. Bell.*) Fifteen miles up the Kaministiqua River, west of Lake Superior. (*Macoun.*) Rainy River, North Western Ontario. (*Dawson.*)

(2259.) **H. fimbriata,** R. Br. Hort. Kew. (Ed. 2) V., 193.

Platanthera fimbriata, Lindl. Var. *a.* Hook. Fl. II., 200.

Low meadows and swamps; rare. Meadow's, Caledonia, Guysboro Co., N.S. (*Faribault.*) Bass River, N.B.; rare. (*Fowler, Cat.*) Tobique River, N.B., 1884. (*Hay.*) Ste. Anne de la Pérade, Champlain Co., Q. (*St. Cyr.*) Gomin's woods, near Quebec. (*Thomas.*) Abundant in low swampy ground, River Rouge, Argenteuil Co., Q. (*D'Urban.*) Gregory's meadows, Montreal, 1821. (*Dr. Holmes.*) Land's farm, near Hamilton, Ont. (*Logie.*)

601 CYPRIPEDIUM, Linn. Gen. 1015. (LADY'S SLIPPER.)

(2260.) **C. arietinum,** R. Brown. Hort. Kew. (Ed. 2) V., 222.

Cedar and tamarack swamps, usually on hummocks. Saguenay River. Q. (*Scott.*) Savanne, near Montreal, 1821. (*Dr. Holmes.*) Dow's swamp, Ottawa. (*Fletcher, Fl. Ott.*) Abundant in the big swamp, Murray, Northumberland Co.; also in a swamp at the base of the Oak Hills, and in pine woods two miles north of Belleville, Hastings Co., Ont. (*Macoun.*) Portage of the Grand Rapid of the Saskatchewan, Man. (*Hooker, Fl.*)

(2261.) **C. parviflorum,** Salisb. Linn., Soc. Trans. I., 77; Pursh, Fl. II., 594.

C. Calceolus, Michx., Fl. II., 161.

Rather common in swamps in Ontario. Newfoundland. (*Miss Brenton.*) Restigouche Co.; also Tobique, near Pokiok, N.B. (*Fowler,*

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Cat.) Anticosti and Mingan Islands. (*Verrill.*) River de Brig, Anticosti. (*Macoun.*) Savanne, near Montreal, 1821. (*Dr. Holmes.*) Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Cedar swamp north-west of Prescott, Ont.; rare. (*Billings.*) Swamps near Belleville; also in the big swamp, Murray, Northumberland Co., Ont. (*Macoun.*) Mountain side beyond Mr. Bridge's house, Hamilton, Ont. (*Logie.*) Cedar swamps, London, Ont. (*Burgess.*) Komoka, Ont. (*Millman.*) Moose Factory, James Bay. (*Cottar & Dr. Hayden.*) Water Hen River, Lake Winnipegoosis, and on the Assiniboine River, at the Grand Valley, Man.; also at the Kananaskis bridge, C.P.R., Rocky Mountains. (*Macoun.*) Throughout Canada to Lake Winnipeg and the Rocky Mountains. (*Hooker, Fl.*)

(2262.) **C. pubescens,** Swartz. Hook., Fl. II., 205; Pursh, Fl., II., 594.

C. parviflorum, Ait. Bot. Mag. t., 911 (non Willd.)

Common in swamps, and often on banks in woods. Port Mulgrave, Guysboro Co., N.S. (*Ball.*) Truemansville, N.S. (*Trueman.*) Galloway, near Richibucto; rather rare; Edmunton, and common at Andover, N.B. (*Fowler. Cat.*) Campbellton, N.B. (*Chalmers.*) Swamps along the Gaspé coast. (*Macoun.*) In wet places, Rivière du Loup, Q. (*Thomas.*) St. Charles Island, Mingan. (*St. Cyr.*) Savanne, near Montreal, 1821. (*Dr. Holmes.*) Near Lake St. Jean, Wentworth, Argenteuil Co., Q. (*D'Urban.*) Hull, Q.; Little Chaudiere, and other places near Ottawa. (*Fletcher, Fl. Ott.*) Common in woods and swamps. Hastings, Prince Edward and Northumberland Co's., Ont. (*Macoun.*) Prince's Island, near Hamilton, Ont. (*Logie.*) Cockburn Island, Georgian Bay. (*J. Bell.*) East side of La Cloche Island, Georgian Bay. (*R. Bell.*) London, Ont., and Emerson, Man. (*Burgess. Millman.*) Lake Mistassini, N.E.T., and Missinaibi River, Ont. (*J. M. Macoun.*) Echimamish River, Keewatin. (*R. Bell.*) In swamps along Lake Winnipegoosis, and abundant on the prairie and in thickets throughout Manitoba, and westward to the base of the Rocky Mountains at Kananaskis, C.P.R. (*Macoun.*) Canada to the Saskatchewan. (*Hooker, Fl.*)

(2263.) **C. spectabile,** Salisb. Linn., Trans. I., 78; Hook., Fl. II., 204. Pursh, Fl. II., 594.

C. Canadense, Michx., Fl. II., 161.
C. album, Ait. Kew. (Ed. 1) III., 303.

Cedar and tamarack swamps, often abundant. Pictou, N.S. (*McKay.*) St. John Co.; Restigouche; York and Castleton Co's.; Andover and

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Tobique River. (*Fowler, Cat.*) Nicolet, Q. (*St. Cyr.*) Mountain swamp, Montreal, 1821. (*Dr. Holmes.*) Dow's swamp and Experimental Farm, Ottawa, abundant. (*Fletcher, Fl. Ott.*) Swamp near Heck's mills, North Augusta, and common in bogs northward from Prescott, Ont. (*Billings.*) Abundant in many swamps in Hastings, Prince Edward and Northumberland Co's., Ont.; also at Chicken Bay, Lake Huron. (*Macoun.*) Lake Medad, near Hamilton, Ont. (*Logie.*) Westminster Ponds; and swamps, London; also abundant at Southampton, Ont. (*Burgess.*) Thompson's Point, Georgian Bay. (*J. Bell.*)

(2264.) **C. acaule,** Ait. Kew. (Ed. 1.) III., 161; Michx. Fl. II., 161.

C. humile, Pursh, Fl. II., 595; Hook., Fl. II., 204.

In swamps and pine or sandy woods; frequent. Newfoundland. (*Miss Brenton.*) New Harbor, Newfoundland. (*Rev. A. Waghorne.*) Windsor; North West Arm, Halifax; Pictou and Guysboro, N.S. (*Sommers, Cat.*) North Mountain, Annapolis, and at Kingston, N.S. (white variety.) Halifax. (*Macoun & Burgess.*) Rather common, Black River, Northumberland Co.; Fredericton; Lily Lake; St. Francis River, N.B. (white variety.) (*Fowler, Cat.*) Lake Temiscouata, Q. (*Ami.*) Outchechow, and Island of Orleans, Q. (*St. Cyr.*) In woods at Rivière du Loup, Q. (*Thomas.*) On gneiss rocks and sand, River Rouge, Argenteuil Co., Q. (*D'Urban.*) Lake Flora, near Hull, and in a swamp at Beechwood, near Ottawa. (*Fletcher, Fl. Ott.*) Swamp near Heck's mills, near Prescott, Ont. (*Billings.*) Vicinity of Hamilton, Ont. (*Logie.*) Evergreen woods and Westminster Ponds, London, Ont. (*Burgess. Millman.*) Not uncommon in swamps throughout Hastings, Addington, Northumberland and Peterboro Co's., Ont.; also on St. Ignace Island, and at the mouth of Nipigon River, Lake Superior. (*Macoun.*) Rupert River, N.E.T.; Severn River, Keewatin. (*J. M. Macoun.*) From Canada to Fort Franklin, on the Mackenzie River. (*Hooker, Fl.*)

(2265.) **C. montanum,** Dougl. Lindl., Orchid, 528.

C. occidentale, Watson. Macoun Cat., No. 1801.

Exclusively western and confined to the Pacific slope. Occasionally met with at Donald, in the Columbia Valley, B.C.; also on the Fraser River, at Fort George, B.C. (*Macoun.*) Okanagan Lake, B.C. (*Dawson.*) Woods near Cadboro Bay, Vancouver Island. (*King.*) Vicinity of Victoria, Vancouver Island. (*Fletcher.*)

(2266.) **C. passerinum,** Rich. Hook., Fl. II., 205.

C. parviflorum, Rich. App. Ed. I., 340.

On wet sand and in swamps; rare. Near Moose Factory, James

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Bay. (*Cottar & Dr. Hayden.*) Charlton Island, James Bay. (*J. M. Macoun.*) On wet sand at the Pic River, Lake Superior; very abundant in a spruce swamp at the Kananaskis station, close to Bow River, Rocky Mountains and westward to Silver City. (*Macoun.*) Pine woods, from the Saskatchewan to lat. 58°, and in the Rocky Mountains. (*Hooker, Fl.*) Cañon, Yukon River, 1887. (*W. Ogilvie.*)

(2267.) **C. guttatum,** Swartz. Reichenb. Ic. Bot. t, 210.

We know nothing of this species. Two specimens only, with withered flowers, were gathered at Fort Franklin, on the Mackenzie, by Dr. Richardson. Most abundant at Ounalashka. (*Hooker, Fl.*)

CIV. HÆMODORACEÆ. Blood-wort Family.

602. ALETRIS, Linn. Gen. 428. (COLIC-ROOT)

(2268.) **A. farinosa,** Linn. Sp. (Ed. 2.) I., 456.

A. alba, Michx., Fl. I., 189; Pursh, Fl. I., 225.

Sandy thickets. Leamington, Essex Co., Ont. (*Burgess.*)

CV. IRIDACEÆ. Iris Family.

603. IRIS, Linn. Gen. 59. (FLOWER-DE-LUCE)

(2269.) **I. versicolor,** Linn. Hook., Fl. II., 206; Pursh, Fl. I., 29.

I. Virginica, Pursh, Fl. I., 29.

Abundant in ditches, swamps, and by river and lake margins. New Harbor, Newfoundland. (*Rev. A. Waghorne.*) Halifax, Pictou and Canso, Guysboro Co., N.S. (*Sommers, Cat.*) Truro and Annapolis, N.S. (*Macoun.*) Abundant in wet places throughout New Brunswick. (*Fowler, Cat.*) Dalhousie, N.B., in a fresh water swamp. (*Fletcher.*) Common throughout Quebec and Ontario, extending westward to the Lake of the Woods (*Burgess*) and north eastward to Lake Mistassini, N.E.T., and Charlton Island, James Bay, and west to Lake Winnipeg and Beren's River. (*J. M. Macoun.*) Winnipeg and North West Angle Road. (*Dawson.*) Michipicotin River, from Long Portage to Lake Mattawagaming, north of Lake Superior. (*R. Bell.*)

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(2270.) **I. Hookeri,** Penny; Stend. Nomen., 1840.

I tridentata, Hook. Fl. II., 206.

I. Caurina, Hook., Fl. II., 206.

Apparently peculiar to the sea coast, and always found within the limit of the spray from the sea. The writer is of opinion that all allusions to *I. versicolor*, found on the coast, belong here. New Harbor, Newfoundland. (*Rev. A. Waghorne.*) Wet bank above the sea, Louisburg, Cape Breton. (*Burgess.*) On the sand bar, South Sydney, Cape Breton; abundant along the whole Gaspé coast, from Gaspé Basin to Petit Metis. (*Macoun.*) Dalhousie, N.B. (*Fletcher.*) Cacouna and Kamouraska, Q. (*Pringle.*) Mingan Islands, St. Lawrence. (*St. Cyr.*) Magdalen Islands, Gulf of St. Lawrence. (*J. Richardson.*) Mingan Islands; and Ellis Bay, Anticosti. (*Verrill.*)

(2271.) **I. tenax,** Dougl. Hook., Fl. II., 206.

No Canadian specimen of this species has ever fallen into our hands. Newfoundland and New Brunswick. (*Hooker, Fl.*) In the neighborhood of Hull, near Ottawa; Determined by Dr. Vasey. (*Fletcher, Fl. Ott.*) Common on dry undulating grounds, from Cape Mendocino to Puget's Sound, North West Coast. (*Hooker, Fl.*) We strongly suspect that the eastern references belong to *I. Virginica*, but have no means of deciding.

(2272.) **I. Virginica,** Linn. Hook., Fl. II., 206.

I. prismatica, Pursh, Fl. I., 30.

Chiefly in salt marshes along the coast. Abundant in meadows close to the sea, Louisburg, Cape Breton, 1883. (*Macoun. Burgess.*) New Brunswick. (*Hooker, Fl.*) Nova Scotian and New Brunswick collectors should examine the salt marshes and meadows near the coast for *Iris tridentata* and *I. Virginica*, as there is no doubt of their wide distribution in the maritime provinces.

(2273.) **I. lacustris,** Nutt. Gray, Man. Ed. V., 517.

Sandy thickets close to the beach at Chicken and Red Bays, Bruce Peninsula, Lake Huron, 1871. (*Macoun.*) Very abundant in sandy thickets along Lake Huron at Southampton, Ont. (*Burgess.*)

(2274.) **I. Sibirica,** Linn. Rothr. Alask., 456.

Norton and Kotzebue Sound, Alaska. (*Rothr. Alask.*) We know nothing of this species.

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604. SISYRINCHIUM, Linn. Gen. 1017. (BLUE-EYED GRASS)

(2275.) **S. anceps,** Cav. Pursh, Fl. I., 31; Hook., Fl. II., 207.

S. Bermudiana, Michx., Fl. I., 33.

S. Bermudiana, Linn. Var. *anceps.* Gray, Man. Ed. V., 517.

Very common, either under this form or the next, from the Atlantic to the Pacific. As the next is the commoner form, we place all general references to *S. Bermudiana* under it and only record here the specimens we have seen. Newfoundland to the Saskatchewan. (*Hooker, Fl.*) New Harbor, Newfoundland. (*Rev. A. Waghorne.*) Amherst Island Magdalen Islands, N.S. (*J. Richardson.*) Coast of Gaspé, Q., and at Belleville, Ont. (*Macoun.*) Vicinity of Hamilton, Ont. (*Logie.*) Kitaman River, Kootanie Valley, Rocky Mountains. (*Dawson.*) Donald, Columbia Valley, B.C. (*Macoun.*) Sitka. (*Rothr. Alask.*)

(2276.) **S. mucronatum,** Michx. Fl. I., 33; Hook., Fl. II., 206.

S. *Bermudiana,* Linn. Var. *mucronatum,* Gray, Man. Ed. V., 517.

Petty Harbor, Newfoundland. (*R. Bell.*) Windsor, Halifax and Pictou, N.S. (*Sommers, Cat.*) Wet meadows, Louisburg, Cape Breton. (*Macoun.*) Meadows at Sherbrooke, Guysboro Co., N.S. (*Faribault.*) Among grass, everywhere, New Brunswick. (*Fowler, Cat.*) Throughout Quebec and Ontario, and extending to Hudson Bay on the north, and including the prairie region, the Rocky Mountains, British Columbia and Vancouver Island. All collectors throughout this immense region have met with it, and although it takes the form of Var. *albidum* on the prairies, and becomes more scabrous and taller on Vancouver Island, there are no constant characters to separate it into varieties.

(2277.) **S. Californicum,** Ait. Hort. Kew. (Ed. 1) IV., 135.

S. lineatum, Torrey, Pacif. Ry. Rep., IV., 143.

Abundant along the shores of Shawnagin Lake; Horne Lake, near Qualicum; and Sproat Lake, near Alberni, Vancouver Island, 1887. (*Macoun.*)

2278.) **S. grandiflorum,** Dougl. Hook., Fl. II., 207.

A most lovely flower and one of the earliest; on dry mossy rocks, amongst oaks in the southern part of Vancouver Island, especially at Victoria and Cedar Hill. (*Dawson, Fletcher, Macoun.*)

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CVI. AMARYLLIDACEÆ. Amaryllis Family.

605. HYPOXIS, Linn. Gen. 417. (STAR-GRASS)

(2279.) **H. erecta,** Linn. Pursh, Fl. I., 224; Hook., Fl. II., 207.
H. Carolinianum, Michx., Fl. I., 188.

Meadows and grassy woodlands. Not common, eastward. Sandy meadow near Trenton station, and in a meadow near the Ferry House, opposite Belleville, Hastings Co., Ont. (*Macoun.*) Prince's Island, near Hamilton, Ont. (*Logie.*) Sandy woodland, Hatchley, Ont.; also borders of woods. Emerson, Man. (*Burgess.*) Very abundant on the prairie at Brandon and the country around the Brandon Hills and westward (*Macoun.*) South of Moose Mountain, Assiniboia. (*J. M. Macoun.*) North Antler Creek, 49th parallel. (*Dawson.*)

CVII. DIOSCOREACEÆ. Yam Family.

606. DIOSCOREA, Linn. Gen. 1122. (YAM)

(2280.) **D. villosa,** Linn. Pursh, Fl. I., 251; Hook., Fl. II., 207.
D. paniculata, Michx., Fl. I., 239.

Very rare in Canada. Only found west of Toronto. Marsh near Dundas, Ont. (*Buchan.*) Thickets on river bank, London, Ont. (*Burgess. Millman.*)

CVIII. LILIACEÆ. Lily Family.

607. SMILAX, Linn. Gen. 1120. (GREEN-BRIER)

(2281.) **S. quadrangularis,** Pursh, Fl. I., 251.
S. rotundifolia, var. *quadrangularis,* Gray, Man. Ed. V., 519.
S. rotundifolia, Linn. Hook., Fl. II., 172; Pursh, Fl. I., 250.
S. cauduca, Pursh, Fl. I., 250.

Thickets in damp woods on Pelee Point, Lake Erie, 1882. (*Macoun.*) Low woods near Leamington, Essex Co., Ont. (*Burgess.*)

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(2282.) **S. hispida,** Muhl., Cat. 97.

Low swampy woods not common, eastward. Abundant in black ash swamps in many parts of Hastings Co.; borders of Cold Creek, Brighton, and along the Trent above Campbellford, and in woods west of Newcomb's Mills, Cramahe, Northumberland Co., Ont. (*Macoun*) Vicinity of Hamilton, Ont. (*Logie.*) Low woods and thickets at London and Owen Sound, Ont. (*Burgess.*) Port Dover, Lake Erie. (*Macoun.*)

(2283.) **S. herbacea,** Linn. Michx., Fl. I., 238; Pursh, Fl. I., 251.

S. peduncularis, Muhl. Hook., Fl. II., 173; Pursh, Fl. I., 251.
S. pulverulenta, Michx., Fl. I., 238.
S. lasioneuron, Hook., Fl. II., 173.

Rather common in rich woods and thickets. Rothesay and Fredericton; rather common along the St. John River, St. Hilaire, N.B. (*Fowler, Cat.*) Montreal Mountain, 1821. (*Dr. Holmes.*) Quebec and Island of Orleans. (*Thomas.*) Ste. Anne de la Pèrade, Champlain Co., Q. (*St. Cyr.*) Devil's River, on sand climbing over bushes, Argenteuil Co., Q. (*D'Urban.*) River banks and on islands at Ottawa. (*Fletcher, Fl. Ott.*) Thickets around Prescott, Ont., and northward; common. (*Billings.*) Borders of fields west of Hamilton, Ont. (*Logie.*) Neighborhood of London, Ont. (*Burgess. Millman.*) Borders of fences at Castleton and Belleville, Ont.; common; also 15 miles up the Kaministiqua, west of Lake Superior; in thickets along the Assiniboine River, west of Portage la Prairie, Man. (*Macoun.*) Thickets at Emerson, on the Red River, Man. (*Burgess.*) Canada to Lake Winnipeg and Red River, and west to Fort Carleton, on the Saskatchewan. (*Hooker, Fl.*)

608. ASPARAGUS, Linn. Gen. 424. (ASPARAGUS)

(2284.) **A.** OFFICINALIS, Linn. Pursh, Fl. I., 235. (Garden Asparagus.)

A garden escape in a number of localities. Waste places around Ottawa. (*Fletcher, Fl. Ott.*) Waste places at London, Ont. (*Burgess. Millman.*) Burlington Beach, near Hamilton, Ont. (*Buchan. Burgess.*) Waste heaps, and growing in a piece of woods near Belleville, Ont.; also at Victoria and Nanaimo, Vancouver Island. (*Macoun.*)

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609. POLYGONATUM, Adans. (SOLOMON'S SEAL)

(2285.) **P. biflorum,** Ell. Gray, Man. Ed. V., 531.

P. multiflorum, Desf. Hook., Fl. II., 176, in part.
P. angustifolium, canaliculatum, pubescens, hirtum, latifolium and *multiflorum,* Pursh, Fl. I., 234-235.
Convallaria multiflora, Michx., Fl. I., 202.

Rather common in rich woodlands and by fences. Near Halifax, N.S. (*Lawson.*) Not rare, Pictou, N.S. (*McKay.*) Truro, Annapolis, and Windsor, N.S. (*Macoun.*) Fredericton; St. Stephen; common at Salmon River and Andover; St. Francis and Upper St. John, N.B. (*Fowler, Cat.*) Island of Orleans. (*St. Cyr.*) In rich woods at Rivière du Loup, Q. (*Thomas.*) Abundant in rocky woods, Argenteuil Co., Q. (*D'Urban.*) Montreal Mountain, 1821. (*Dr. Holmes.*) Rich woods, vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Rich woods, common at Prescott, Ont. (*Billings.*) Kemptville, Ont. (*Porter.*) Rich low woods, very common throughout central Ontario. (*Macoun.*) Common at Hamilton, Ont. (*Logie.*) Rich wooded banks at London; and Parry Sound, Georgian Bay. (*Burgess.*) Hilton, near Wiarton, Ont. (*J. Bell.*) Woods at Owen Sound, and in woods up the Kaministiqua, west of Lake Superior. (*Macoun.*)

(2286.) **P. giganteum,** Dietr. Gray, Man. Ed. V., 531.

P. latifolium, var. *commutatum,* Baker, Journ. Linn., Soc. XIV., 555, chiefly.
P. multiflorum, Hook., Fl. II., 176, in part.

Confined to western Ontario and westward. Dunning's farm, near Niagara, and at Amherstburgh, Detroit River, Ont.; also at Portage la Prairie, Man. (*Macoun.*) Vicinity of London, Ont., and in thickets at Emerson, Man. (*Burgess. Millman.*) Along the Saskatchewan. (*Hooker, Fl.*)

610. STREPTOPUS, Michx. Fl. I., 200. (TWISTED-STALK)

(2287.) **S. amplexifolius,** DC. Fl. Fran. III., 174.

S. distortus, Michx., Fl. I., 200. Hook., Fl. II., 173.
S. amplexicaulis, Poir. Baker, Journ. Linn., Soc. XIV., 591.

In cool ravines and deep shade, along mountain brooks; not common anywhere, but extending across the continent to Vancouver Island. Labrador. (*Butler.*) Windsor and Pictou, N.S. (*Sommers, Cat.*)

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Shady ravines at Truro and Pirate's Cove, N.S.; also in a ravine at Whycocogmah, Cape Breton. (*Macoun.*) Kent and Northumberland Co's.; Campbellton; Lancaster; rather common at Salmon River, Tobique, and Bald Mountains, N.B. (*Fowler, Cat.*) Common on Anticosti and along the Gaspé coast, and on the slopes of Mount Albert, Q. (*Macoun.*) Mingan Islands, and Island of Orleans, St. Lawrence River. (*St. Cyr.*) Rivière du Loup, Q. (*Thomas.*) In great abundance in moist places in woods, Argenteuil Co., Q. (*D'Urban*) Damp woods, Nipigon, Pic and Current rivers, Lake Superior. (*Macoun.*) Grand Marais, Lake Superior, and up the Michipicotin River, north of the lake. (*R. Bell.*) Hilton, near Wiarton, Ont. (*J. Bell.*) Porcupine Mountain, Man. (*Macoun.*) Lake Mistassini, N.E.T. (*J. M. Macoun.*) South Kootanie Pass and Michel Creek, Rocky Mountains. (*Dawson.*) Common in wet thickets from Morley westward through the Rocky, and Selkirk mountains; not uncommon along mountain streams at Goldstream, Nanaimo, and Qualicum, Vancouver Island. (*Macoun.*) Yale, and in the mountains at Spence's Bridge, B. C. (*Fletcher.*) Fort Wrangel, Sitka. (*Meehan.*) Sitka and Ounalashka. (*Rothr. Alask*) From Newfoundland and Hudson Bay to the Rocky Mountains, and thence to the Columbia and north to Fort McLaughlin and Sitka. (*Hooker, Fl.*) Greenland. (*Lange.*)

(2288.) **S. roseus,** Michx., Fl. I., 201; Pursh, Fl. I., 232; Hook., Fl. II., 173.

Abundant in drier woods than the preceding, but scarce on the Pacific slope. Labrador. (*Butler.*) Windsor, Halifax, Pictou and Canso, Guysboro Co., N.S. (*Sommers, Cat.*) Very common in the northern counties; also in St. John and King's Co's., N.B. (*Fowler, Cat.*) Campbellton, N.B. (*Chalmers.*) In woods at Truro and Annapolis, N.S.; also at Salt Lake, Anticosti, and common in woods along the Gaspé coast. (*Macoun.*) Glenelg, Guysboro Co., N.S. (*Faribault*). Anticosti and at Ouatchechou, Q. (*St. Cyr.*) Woods at Rivière du Loup, Q. (*Thomas.*) Abundant in rocky woods, Argenteuil Co., Q. (*D'Urban.*) Ottawa. (*Fletcher, Fl. Ott.*) Common around Prescott, Ont. (*Billings.*) Kemptville, Ont. (*Porter.*) Common in low rich woods throughout central Ontario. (*Macoun.*) Vicinity of Hamilton, Ont. (*Logie.*) Rich woods, Parry Sound, Georgian Bay. (*Burgess.*) Owen Sound and Hilton, Ont. (*J. Bell.*) Opposite Gros Cap, Lake Superior, and up the Michipicotin River, north of the lake. (*R. Bell.*) Woods up the Kaministiqua and Dawson road, Port Arthur; also in woods, Nipigon River, Lake Superior. (*Macoun.*) Lake Mistassini, N.E.T. (*J. M. Macoun.*) South Kootanie Pass, Rocky Mountains, and on the Skagit River, B.C.

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(*Dawson.*) Not observed in the Rocky Mountains, but detected in Beaver Creek valley, near the Selkirk summit. (*Macoun.*) Goose Creek Mountains, five miles from Keithly, Cariboo, B.C.; 5,800 feet alt. (*Bowman.*) Lake Lindeman, lat. 60°. (*Schwatka.*) From Lake Huron to the Saskatchewan, and on the North West coast from the Columbia to lat. 58°. (*Hooker, Fl.*)

611. SMILICINA, Desf. (FALSE SOLOMON'S SEAL)

(2289.) **S. stellata,** Desf. Pursh, Fl. I., 233; Hook., Fl. II., 176.
Convallaria stellata, Michx., Fl. I., 202.

Very common in low moist woods, along streams, and in meadows. Labrador. (*Butler.*) Pictou and Truro, N.S. (*Sommers, Cat.*) Common on St. Paul's Island, Magdalen Islands, and Newfoundland. (*McKay.*) Damp woods at Truro and Pirate's Cove, N.S. (*Macoun.*) Moist banks, Kouchibouguac; intervales, Salmon River; St. John River, Kennebeccasis; Petitcodiac; Cedar Brook, on the Tobique; Indian Falls, Nepisiquit River, N.B. (*Fowler, Cat.*) Metapediac, Restigouche Co., N.B. (*Chalmers.*) Salt Lake, Anticosti, and in the valley of the Ste. Anne des Monts River, Gaspé. (*Macoun.*) Island of Orleans and Mingan River, St. Lawrence River. (*St. Cyr.*) Rivière du Loup, Q. (*Thomas.*) Savanne, near Montreal, 1821. (*Dr. Holmes.*) Montreal Mountain. (*Porter.*) On sand along the River Rouge, Argenteuil Co., Q. (*D'Urban.*) Dow's swamp and other localities at Ottawa. (*Fletcher, Fl. Ott.*) Swamps and low intervales along streams, abundant in central Ontario. (*Macoun.*) Rare in woods at Prescott, Ont. (*Billings.*) Prince's Island near Hamilton, Ont. (*Logie.*) Mississaqui, Drummond, and Cockburn islands, Georgian Bay. (*J. Bell.*) Sandy thickets at Toronto, low woods at London, Ont.; Parry Sound, Georgian Bay, and in the Red River valley at Emerson, Man. (*Burgess.*) North shore of Lake Superior. (*Agassiz.*) Up the Kaministiqua River, west of Lake Superior. (*Macoun.*) Moose Factory, James Bay. (*Cottar & Dr. Hayden.*) Charlton Island, James Bay; Lake Winnipeg and eastward down the Severn River to Hudson Bay; also on Moose Mountain, Assiniboia. (*J. M. Macoun.*) In a thicket at Pembina Mountain, Man.; near Belly River and on the North Fork of Old Man River, Rocky Mountains. (*Dawson.*) In moist thickets on the Assiniboine, at Portage la Prairie and Brandon; abundant in moist meadows and grassy places from the vicinity of Morley through the Rocky Mountains to Donald in the Columbia valley. (*Macoun.*) From Lake Huron to the Saskatchewan, and from Hudson Bay to the Rocky Mountains. (*Hooker, Fl.*)

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(2290.) **S. sessilifolia,** Nutt. in herb. Watson Proced. Am. Acad. XIV., 245 (1879).

S. stellata, Hook., Fl. II., 176, in part.
Tovaria sessilifolia, Baker, Journ. Linn., Soc. XIV., 566.

This species takes the place of *S. stellata* west of the Coast Range, as all our specimens from the west coast are of this species. Fraser River valley at Yale, B C.; also quite common in the valleys of rivers and along brooks, at Victoria, Cedar Hill, Goldstream and northward, Vancouver Island. (*Macoun.*) Near Victoria, Vancouver Island (*Fletcher.*) North West coast. (*Hooker, Fl.*)

(2291.) **S. racemosa,** Desf. Pursh, Fl. I., 233; Hook., Fl. II., 176, in part.

S. ciliata, Pursh, Fl. I., 232.
Convallaria racemosa, Michx., Fl. I., 202.

Rich woods, not infrequent. Dartmouth, Halifax, Bedford, Pictou and Truro, N.S. (*Sommers, Cat.*) Truro and Straits of Canso, N.S. (*Macoun.*) Bass River; Welsford; and Nerepis Valley, N. B. (*Fowler, Cat.*) Campbellton, N.B. (*Chalmers.*) Island of Orleans. (*St. Cyr.*) Gomin's woods, Quebec. (*Thomas.*) Montreal Mountain, 1821. (*Dr. Holmes.*) Abundant in rocky woods, Argenteuil Co., Q. (*D'Urban.*) McKay's bush and other localities near Ottawa. (*Fletcher, Fl. Ott.*) Common around Prescott, Ont. (*Billings.*) Kemptville, Ont. (*Porter.*) Common in rich woods throughout central Ontario. (*Macoun.*) In woods, mountain side west of Hamilton, Ont. (*Logie.*) Low woods at London; and Parry Sound, Georgian Bay. (*Burgess.*) Owen Sound, Hilton, Gore Bay, and McLeod's Harbor, Georgian Bay. (*J. Bell.*) Opposite Grand Island, Lake Superior. (*R. Bell.*) North shore of Lake Superior. (*Agassiz.*) Fifteen miles up the Kaministiqua River, west of Lake Superior. (*Macoun.*) Throughout Canada to the Saskatchewan. (*Hooker, Fl.*)

(2292.) **S. amplexicaulis,** Nutt. Journ. Philad. Acad. VII., 58.

S. racemosa, var. *amplexicaulis*, Watson. Macoun, Cat., No. 1843.
S. racemosa, Hook., Fl. II., 176, in part.
Tovaria racemosa, Baker, Journ. Linn., Soc. XIV., 570, in part.

Rather common in thickets and on beds of snow-slides, from Morley, in the Rocky Mountains, to the summit of the Selkirks. (*Macoun.*) Cypress Hills, Alberta. (*J. M. Macoun.*) Michel Creek, Flathead River, and Coldwater River, B.C. (*Dawson.*) North West coast. (*Hooker, Fl.*) Specimens from Goldstream and Nanaimo, Vancouver Island, although referred here, are exactly like eastern *S. racemosa.* All the leaves are more or less petioled, and had these specimens been found in the Atlantic provinces they would be referred to the preceding species.

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Mr. Jas. Fletcher describes his specimens from Mt. Finlayson, Vancouver Island, as having much larger leaves, more plaited, and flower much more highly scented than eastern *racemosa*. (*Macoun.*)

(2293.) **S. trifolia,** Desf. Pursh, Fl. I., 233. Hook., Fl. II., 175.
Convallaria trifolia, Michx., Fl. I., 202.
Tovaria trifolia, Baker, Journ. Linn., Soc. XIV., 565.

Abundant in swamps and wet woods, from the Atlantic to the Pacific. Labrador. (*Butler.*) New Harbor, Newfoundland. (*Rev. A. Waghorne.*) Windsor, N.S. (*How.*) Pictou, N.S. (*McKay.*) Swamps, near Halifax, N.S. (*Macoun & Burgess.*) Magdalen Islands, Gulf of St. Lawrence. (*J. Richardson.*) Kouchibouguac, and Hudson's Brook, Kent Co.; St. John Co., N.B. (*Fowler, Cat.*) Swamps, Dalhousie, N.B. (*Chalmers.*) Swamps, Salt Lake, Anticosti. (*Macoun.*) Mingan River and Island of Orleans, Q. (*St. Cyr.*) Swamps, Rivière du Loup, Q. (*Thomas.*) Summit of Mount Albert, Gaspé, Q.; and Kemptville, Ont. (*Porter.*) Dow's swamp and other peat bogs near Ottawa. (*Fletcher, Fl. Ott.*) Swamp north of Prescott, Ont. (*Billings.*) Cold peaty swamps throughout central Ontario. (*Macoun.*) Marsh at Millgrove, near Hamilton, Ont. (*Logie.*) Peat bogs, London, and Blenheim, Ont. (*Burgess.*) Bruce Mines, Hilton, Thompson Point, Gore Bay, and McLeod's Harbor, Georgian Bay. (*J. Bell.*) Swamps at Owen Sound and west of Thunder Bay, and around Lake Nipigon, Ont. (*Macoun.*) Missinaibi River, Ont.; Lake Mistassini and down the Rupert River, N.E.T.; Lake Winnipeg and eastward down the Severn, Keewatin. (*J. M. Macoun.*) Opposite Gros Cap, Lake Superior; Nelson River and Oxford House, Keewatin. (*R. Bell.*) Observed in a spruce swamp at the Kananaskis, Rocky Mountains. (*Macoun.*) Swamps throughout Canada, to Bear Lake and the Rocky Mountains. (*Hooker, Fl.*)

612. MAIANTHEMUM, Wiggers. ("LILY OF THE VALLEY")

(2294.) **M. Canadense,** Desf. Watson, Proced. Am. Acad. XIV. 247.
Smilicina bifolia, Roem. Hook., Fl. II., 176, in part.
S. Canadense, Pursh, Fl. I., 233.
S. bifolia, var. *Canadensis,* Gray. Man., Ed. V., 530.
Convallaria bifolia, Michx., Fl. I., 201.

On dry hummocks and in cool woods, from the Atlantic to the Rocky Mountains. Labrador. (*Butler.*) Brigus, Newfoundland. (*R. Bell.*) New Harbor, Newfoundland. (*Rev. A. Waghorne.*) Pictou, N.S. (*McKay.*) Truro, N.S. (*Chambers. Macoun.*) New Harbor, Guysboro Co., N.S. (*Faribault.*) Magdalen Islands, Gulf of

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St. Lawrence. (*J. Richardson.*) Truro, Halifax and Canso, N.S. (*Macoun & Burgess.*) Very common throughout New Brunswick. (*Fowler, Cat.*) Campbellton, N.B. (*Chalmers.*) Woods, Salt Lake, Anticosti; and along the whole peninsula of Gaspé, Q. (*Macoun.*) Ouatchechou, Champlain Co., and Island of Orleans, Q. (*St. Cyr.*) Rich woods, common at Rivière du Loup, Q. (*Thomas.*) Montreal Mountain, 1821. (*Dr. Holmes.*) Abundant in all woods near Ottawa. (*Fletcher, Fl. Ott.*) Woods, common at Prescott, Ont. (*Billings.*) Kemptville, Ont. (*Porter.*) Very abundant in cool woods in central Ontario. (*Macoun.*) Vicinity of Hamilton, Ont. (*Logie.*) Rich woods at London, Ont. (*Burgess. Millman.*) Mississagui Island and Cockburn Island, Georgian Bay. (*J. Bell.*) Woods at Owen Sound; Nipigon Lake and River, and around the west side of Lake Superior; and westward to Brandon, on the Assiniboine, Man. (*Macoun.*) Emerson, Man. (*Burgess. Millman.*) Lake Mistassini, N.E.T., and down the Rupert River to James Bay; Missinaibi River, Ont.; Lake Winnipeg and eastward down the Severn River. (*J. M. Macoun.*) Opposite Gros Cap, Lake Superior; north end of Lake Winnipeg and down the Nelson River, and at Oxford House, Keewatin. (*R. Bell.*) Sitka. (*Meehan.*) Throughout Canada to Bear Lake, and from Hudson Bay and Newfoundland to the Rocky Mountains. (*Hooker, Fl.*)

(2295.) **M. bifolium,** D.C. var. **dilatatum,** Wood. Proced. Phil. Acad. 174, (1868.)

Smilicina bifolia, Hook., Fl. II., 176, in part.

Apparently confined to the west coast of America. Queen Charlotte Islands, B.C. (*Dawson.*) Common in low woods along small streams at Cedar Hill, Goldstream, Beacon Hill and Oak Bay, near Victoria; Nanaimo and Qualicum, and in the woods generally around Mount Arrowsmith, Vancouver Island. (*Macoun.*) Fort Wrangel, Sitka. (*Meehan.*) Fort Simpson and Sitka, on the North-west coast. (*Hooker, Fl.*)

613. HEMEROCALLIS, Linn. Gen. 433. (DAY LILY.)

(2296.) **H.** FULVA, Linn. Gray, Man. Ed. V., 535.

Occasionally escapes from gardens, in New Brunswick. (*Fowler, Cat.*) Waste places at Belleville, Ont. (*Macoun.*) Quebec. (*St. Cyr.*) Waste places, near London; rare. (*Burgess. Millman.*)

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614. BRODIÆA, Smith. Trans. Linn. Soc. X., 2.

(2297.) **B. grandiflora,** Smith. Hook., Fl. II., 186.

Milla maritima, Macoun, Cat., No. 1869.

On sandy, rocky, or gravelly soil, in the oak openings. Close to the sea, on Fuller's farm, at Oak Bay; and in numerous places on rocky soil around Victoria and Cedar Hill; abundant on ledges above Departure Bay, and near the Half-way House, Nanaimo, Vancouver Island. (*Macoun.*) Cedar Hill, near Victoria, B.C. (*Meehan. Fletcher.*) North West America and New Georgia. (*Hcoker, Fl.*)

(2298.) **B. Douglasii,** Watson. Proced. Am. Acad. XIV., 237.

Triteleia grandiflora, Lindl. Hook., Fl. II., 186.
Milla grandiflora, Baker. Journ. Linn. Soc.; Macoun, Cat., No. 1870.

In deep sand or in crevices of rocks; rare. Close to the sea at Oak Bay. (*Macoun.*) Cedar Hill, near Victoria, Vancouver Island. (*Fletcher.*)

(2299.) **B. lactea,** Watson. Proced. Am. Acad. XIV., 238.

B. grandiflora, Pursh, Fl. I., 223.
Hesperoscordon Lewisii, Hook., Fl. II., 185.
Milla hyacinthina, Baker. Macoun, Cat. No. 1871.

Abundant by roadsides, along the borders of fields, by lakes, amongst gravel, and on sand by the sea coast, from the vicinity of Victoria to Nanaimo, Qualicum and Alberni, Vancouver Island. (*Macoun.*) Vicinity of Victoria, Vancouver Island. (*Meehan. Fletcher.*) North West America. (*Hooker, Fl.*)

615. ALLIUM, Linn. Gen. 409. (ONION, GARLIC)

(2300.) **A. tricoccum,** Ait. Pursh, Fl. I., 223.

A. triflorum, Pursh, Fl. I., 223.
A. cernuum, Hook., Fl. II., 184.

Not very widely distributed but common in Ontario and western Quebec, Hampton and Petitcodiac; Eel River, Carleton Co., N.B. (*Fowler, Cat.*) Abundant in moist places in woods, Argenteuil Co., Q. (*D'Urban.*) McKay's woods and other places at Ottawa. (*Fletcher, Fl. Ott.*) Common in woods at Prescott, Ont. (*Billings.*) Abundant

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in central Ontario. (*Macoun.*) Vicinity of Hamilton, Ont. (*Logie.*) Rich woods, London, Ont. (*Burgess. Millman.*) Abundant in woods, Owen Sound, Ont. (*Macoun. J. Bell.*) Batch-ah-wah-nah River, Lake Superior. (*R. Bell.*) Lake Erie. (*Hooker, Fl.*)

(2301.) **A. Schœnoprasum,** Linn. Hook., Fl. II., 185.

Not uncommon in crevices of rocks along lakes and rivers. Newfoundland. (*Dr. Morrison.*) In beautiful clumps, with very bright flowers, in meadows near the sea at Yarmouth, N.S.; in the debris of Jupiter River, Anticosti. (*Macoun.*) Pabineau Falls on the Nepisiquit and Rothesay; Nauwigewauk; very common along the Upper St. John, Tobique and Eel Rivers; Indian Falls of Nepisiquit; Hammond River, N.B. (*Fowler, Cat.*) Bathurst, N.B. (*McGill Coll. Herb.*) Island of Orleans. (*St. Cyr.*) North shore of Lake Superior. (*Agassiz.*) Wet gravelly shore, Port Arthur, Lake Superior. (*Burgess.*) East coast of Lake Nipigon, Current River, Thunder Bay, and east coast of Lake Superior. (*Macoun.*) Missinaibi River, Ont., and Severn River, Keewatin. (*J. M. Macoun.*) Milk River flats, 49th parallel. (*Millman.*) River bank, Belly River, N. W. T. (*Burgess.*) Summit of Kootanie Pass, Rocky Mountains, and Flathead River, B.C. (*Dawson.*) Rather common along the Bow River, from Morley westward to Laggan, thence along the Kicking Horse River to Donald, in the Columbia valley, B.C. (*Macoun.*) Port Clarence, Norton and Kotzebue sounds, and rapids of the Yukon. (*Rothr. Alask.*) Francis River, lat. 61°, and Yukon River, lat. 63° (*Dawson.*) Throughout the wooded country to Bear Lake, and to the prairies of the Rocky Mountains. (*Hooker, Fl.*)

(2302.) **A. cernuum,** Roth. Pursh, Fl. II., 732; Hook., Fl. II., 184.
A. stellatum, Hook., Fl. II., 184, in part.

Abundant in the western part of the prairie region, and westward to Vancouver Island. Low open prairie, Turtle Mountain and Short Creek, Man. (*Burgess.*) Souris River, Man. (*Millman.*) Lake of the woods; West Butte, 49th parallel; South Kootanie Pass, Wild Horse Creek, Kootanie Valley, North Fork of Old Man River, Rocky Mountains; Gatcho Lake, B.C. (*Dawson.*) Blackfoot Crossing, Bow River, Alberta; near Dunvegan, Peace River, lat. 56°; rather common on grassy slopes from Morley westward to Castle Mountain and thence to the Columbia valley at Donald, where it is abundant; on dry slopes at Spence's Bridge, and Lytton, B. C.; grassy places near Victoria; on the slopes of Mount Finlayson; woods near Departure Bay; very abundant at Qualicum and Alberni, and along mountain slopes, Vancouver Island. (*Macoun.*) Nootka, where the bulbs are used as an esculent. (*Hooker, Fl.*)

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(2303.) **A. Canadense,** Kalm. Michx., Fl. I., 194; Pursh, Fl. I., 223; Hook., Fl. II., 185.

Along river banks, rather rare. Montreal Island, above Nun's Island, 1821. (*Dr. Holmes.*) Along the Moira, at the paper mill, Belleville, Hastings Co.; Meyer's Island, in the Trent, above Meyersburg, Northumberland Co.; Massassaga Point, Bay of Quinte, Prince Edward Co.; Colchester, Essex Co., Ont. (*Macoun.*) River bank, London, Ont. (*Burgess. Millman.*)

(2304.) **A. reticulatum,** Fraser. Hook., Fl. II., 184.

A. angulosum, Pursh, Fl. I., 223.

Rather common on dry gravelly slopes in some parts of the prairie region. Open prairie, Turtle Mountain, Man. (*Burgess. Millman.*) Moose Jaw Creek, Assiniboia. (*J. M. Macoun.*) Abundant on gravel ridges and slopes along the Assiniboine River, at Brandon, and on ridges along the Qu'Appelle Valley, near Fort Ellice, Man. (*Macoun.*) Badger Coulee, 49th parallel, and Milk River Ridge, Alberta. (*Dawson.*) Common on a gravelly hillside, Stoney Reserve, Morley, Rocky Mountains. (*Macoun.*) Wooded country, especially about Carleton House, Saskatchewan River. (*Hooker, Fl.*)

(2305.) **A. Geyeri,** Watson. Proced. Am. Acad., Vol. VI., 229.

A. reticulatum, Var. β. Watson, Bot. King's Rep., V., 486.

A few poor specimens of this were gathered near Beacon Hill, Victoria, Vancouver Island, in 1875, and referred to *A. reticulatum.* Fine fruiting specimens were observed at Oak Bay, near the same place, 1887. (*Macoun.*) Cadboro Bay, near Victoria, 1885. (*Fletcher.*)

(2306.) **A. acuminatum,** Hook., Fl. II., 184.

A very beautiful and common species in numerous localities in the southern part of Vancouver Island. On dry ground near Victoria. (*Fletcher. Meehan.*) Yale, B.C. (*J. A. Hill.*) Abundant on rocks around Cedar Hill; at Mount Finlayson, and along the coast from Victoria to Nanaimo, where it is common; on dry ledges near Departure Bay, at Qualicum and on the rocks along the Alberni canal, on the west coast. (*Macoun.*) Mary Island, Gulf of Georgia. (*Dawson.*) Plentiful at Nootka Sound. (*Hooker, Fl.*)

(2307.) **A. stellatum,** Fraser. Hook., Fl. II., 184, in part.

A rather rare and obscure species, occasionally recorded from the prairie region. Rat Portage, Ont. (*Prof. Fowler.*) On the prairie south of the Touchwood Hills, at Pheasant Mountain and on the

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Cypress Hills, Alberta. (*Macoun.*) High Bluff, Man. (*McGill Coll. Herb.*) Plains of the Saskatchewan. (*Hooker, Fl.*) Boston Bar, below Lytton, B.C. (*Fletcher.*) Spence's Bridge, B.C. (*A. J. Hill.*)

(2308.) **A. Nevii,** Watson. Proced. Am. Acad., Vol. VI., 231.
A. reticulatum, Hook., Fl. II., 184, in part.

Abundant in a few localities. This species throws up leaves early in spring, but does not flower until after the middle of June, when it is in perfection. Abundant in a field near the base of Cedar Hill, and in some profusion on rocky ground near Cloverdale, close to Victoria; common on rocky ledges, at the Half Way House, four miles from Nanaimo, Vancouver Island. (*Macoun.*) Nootka. (*Hooker, Fl.*)

(2309.) **A. Vancouverense.**

Abundant on the summit of Mount Arrowsmith, alt. 5,976 feet. It grows in crevices of rocks and bursts into flower as soon as the snow disappears; July 17th, 1887. Dr. Watson, to whom this species has been submitted, believes it to be new. The bulbs have been planted at our Experimental Farm, and the species will be fully described next year. The specimens obtained were too young for correct determination but the species is near *A. falcifolium.*

616. CAMASSIA, Lindl. (CAMASS)

(2310.) **C. Fraseri,** Torr. Pacif. R. Rep., IV., 147.
Scilla Fraseri, Gray, Man., Ed. V., 533.

Apparently rare in Ontario. White Island, in the Detroit River, opposite Amherstburgh, 1882. (*Macoun.*)

(2311.) **C. esculenta,** Lindl. Hook., Fl. II., 186.
Phalangium Quamash, Pursh, Fl. I., 226.

Very abundant in all rich soils, and even in cultivated fields and meadows, throughout the southern part of Vancouver Island. It becomes less common as the oak disappears, but at Qualicum and Alberni it is still in profusion in open spots. (*Macoun. Fletcher. Dawson.*) North West America. (*Hooker, Fl.*) By following the plough in the autumn, when the stubble is being turned over, many fine bulbs can be collected. It is not so much eaten now as formerly, as the Indians have better food since the advent of the whites.

(2312.) **C. Leichtlinii,** Watson. Proced. Am. Acad. Vol. XII., 376,
C. esculenta, var. *Leichtlinii*, Baker. Bot. Mag., t. 6287.
C. esculenta, var *β. floribus albus*, Hook., Fl. II., 186
Chlorogalum Leichtlinii, Baker, Gard. Chron., 689, (1874.)

Occasionally met with, growing in company with the preceding

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species. On King's Farm, at Cedar Hill, near Victoria, Vancouver Island. (*Macoun.*) Vicinity of Victoria, 1884. (*Fletcher. Hill.*) The specimens referred here are exactly like those of Suksdorf, upon which the species was founded by Watson. We have both white and blue flowered specimens.

617. LILIUM, Linn. Gen. 410. (LILY)

(2313.) **L. Philadelphicum,** Linn. Hook., Fl. II., 181; Pursh, Fl. I., 229.

L. umbellatum, Pursh, Fl. I., 229.

Rather common in western Ontario, but more so throughout the prairie region. McKay's woods and other localities near Ottawa. (*Fletcher, Fl. Ott.*) Thickets near the Grand Trunk gravel pit, at Prescott, Ont. (*Billings.*) On gravel banks and ridges, and along the rocky banks of rivers, and over the whole extent of Rice Lake Plains, Ont. (*Macoun.*) East Flamboro, near Hamilton, Ont. (*Logie.*) Sandy woodlands near London; Point Aux Pins, Lake Erie, Ont. (*Burgess.*) Cockburn Island, Georgian Bay. (*J. Bell.*) Very abundant along the north shore of Lake Superior, on exposed rocks, and along Poplar River, Lake Nipigon. (*Macoun.*) Down the Missinaibi River to Moose Factory, James Bay. (*J. M. Macoun.*) Nelson River, and at Oxford House, Keewatin. (*R. Bell.*) Open prairie at Emerson, Man. (*Burgess.*) Red River, Man., plentiful; near Pincher Creek, and between the north and middle fork of the Old Man River, foot-hills, Rocky Mountains. (*Dawson.*) Portage la Prairie, Man. (*McGill Coll. Herb.*) Calgary, Alberta. (*St. Cyr.*) Abundant on the prairies from Winnipeg to Moose Jaw, and westward to Canmore, in the Rocky Mountains, appearing again at Donald, in the Columbia Valley, B.C. (*Macoun.*) Neighborhood of Calgary. (*Prof. Fowler.*) Portage la Loche, lat. 57°. (*Back.*) Lake Huron and throughout Canada to the Saskatchewan and prairies of the Rocky Mountains. (*Hooker, Fl.*)

Var. ——— ?

Probably an albino, petals pale yellow, not spotted; more narrowly lanceolate with longer claws. Near Turtle Mountain, on the open prairie, 49th parallel; rare. (*Dawson.*) Badger Creek, Man. (*Burgess.*)

(2314.) **L. Canadense,** Linn. Hook., Fl. II., 181; Pursh, Fl. I., 229; Michx., Fl. I., 198.

L. pardalinum, var. *Bourgæi,* Baker. Journ. Linn. Soc., XIV., 242.

Common eastward, but rather rare to the west. Not uncommon, Pictou Co., N. S., and Cape Breton. (*McKay.*) Truro and Col-

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chester, N.S.; Whycocogmah, Cape Breton. (*Sommers, Cat.*) Low meadows between New Glasgow and Port Mulgrave, N.S.; in low intervales at Whycocogmah, Cape Breton. (*Macoun.*) Common in meadows at Caledonia, Guysboro Co., N.S. (*Faribault.*) Bathurst, N.B. (*McGill Coll. Herb.*) Common on intervales and moist meadows, New Brunswick. (*Fowler, Cat.*) On the flats along the lower part of the Metapedia River, Q. (*Macoun.*) St. Anne de la Pérade, Q. (*St. Cyr.*) Beauport, near Quebec. (*Thomas.*) Laprairie, near Montreal, 1821. (*Dr. Holmes.*) In meadows along the Grand Trunk Railway, between Cobourg and Port Hope, Ont. (*Macoun.*) Low shady place at London and Blenheim, Ont.; very common. (*Burgess.*) Right bank of Rainy River, below Fort Francis, 1872. (*Macoun.*)

(2315) **L. Carolinianum,** Michx. Fl. I., 197.

L. Canadense, var. *superbum*, Elwes., Mon. Lil. t. 21.

L. superbum, Linn. Hook., Fl. II., 181; Pursh, Fl. I., 230; Macoun Cat., No. 1853.

Rich low grounds, western Ontario. Vicinity of Hamilton, Ont. (*Logie.*) Moist grounds half a mile west of London, Ont. (*Saunders.*) A specimen in our herbarium, collected by Dr. Burgess, near London, in 1879, approaches this species very closely, both in its revolute perianth and almost perfectly smooth leaves. Mr. James Fletcher, botanist to the Experimental Farm at Ottawa, has grown *Lilium Carolinianum* from bulbs purchased in the United States, together with the form here referred to, L. *Carolinianum*. He believes that our own form is different from both L. *Carolinianum* and L. *Canadense* and suggests that Elwes' name should belong to it. It is extremely probable that his view is the correct one.

(2316.) **L. Columbianum,** Hanson. Baker, Linn. Soc. Journ., XIV., 243.

L. Canadense, var. *parviflorum*, Hook., Fl. II., 181.

L. parvum, Kell. Macoun, Cat. No. 1854.

L. Philadelphicum, var. *β*. Hook., Fl. II., 181.

Abundant in some localities; generally on dry gravelly soil. Whipsaw Creek, B.C. (*Dawson.*) Very common at Victoria, Vancouver Island, (*J. Richardson. Fletcher.*) On gravelly soil throughout the oak openings in the southern part of Vancouver Island; common at Nanaimo and near the Wellington Mines; on old sea beaches of gravel and shells at Qualicum, at Horne Lake, in the interior, and Alberni on the west coast. (*Macoun.*)

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618. FRITILLARIA, Linn. Gen. 411. (FRITILLARIA)

(2317) **F. Kamtschatcensis,** Ker. Hook., Fl. II., 181.

The specimens referred here are much taller and stouter than the next species, and, as far as I am aware, are confined to the proximity of the sea. The number of flowers varies from two to four, and they are usually of a dull purple. The first whorl of leaves is generally four, but the next usually has five. Abundant on grassy banks within the influence of spring tides at the mouth of the Nanaimo River, a little below the new bridge; occasional specimens at Gordon Head, four miles from Victoria, Vancouver Island. (*Macoun.*) Vicinity of Victoria, 1876. (*Dawson.*) Sitka, Ounalashka, and Cape Prince of Wales. (*Rothr. Alask.*) North-west coast, on the beach; Observatory Inlet to Stikine River. (*Hooker, Fl.*)

(2318.) **F. lanceolata,** Pursh, Fl. I., 230; Hook., Fl. II., 181.

Very abundant on dry gravelly soil in some localities on the West Coast. Above Lytton, on the Fraser River, B.C. (*Dawson.*) In profusion at Cedar Hill, near Victoria, Vancouver Island. (*Fletcher.*) Very common throughout the oak woods and rocky, mountainous places from Victoria to Nanaimo and north to Qualicum, where it is especially abundant near the sea; and across the island to Alberni. (*Macoun.*) Nootka Sound. (*Menzies.*)

Var. **floribunda,** Benth. On dry ground, King's Farm, and at Cadboro Bay, near Victoria, Vancouver Island. (*Fletcher.*)

(2319. **F. pudica,** Spreng. Hook., Fl. II., 182.

Lilium (*?*) *pudicum,* Pursh, Fl. I., 228.

Not uncommon at Fort McLeod and Lethbridge, Alberta. The only known stations east of the Rocky Mountains. (*N. H. Cowdry.*) Apparently very rare in British Columbia. Collected on the mountain slopes along the Thompson River, at Lytton, B.C. (*Macoun.*) In abundance, with *Calochortus macrocarpus,* on the slope opposite Lytton station, and at Spence's Bridge, B.C. (*Fletcher.*)

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619. ERYTHRONIUM, Gen. 414. Linn. (DOG'S TOOTH VIOLET)

(2320.) **E. Americanum,** Smith. Hook., Fl. II., 182.

E. Dens-canis, Michx., Fl. 198.
E. lanceolatum, Pursh, Fl. I., 230.

Very abundant in rich woods throughout Ontario. Not common at Pictou, N.S. (*McKay.*) Colchester Co., N.S. (*Sommers, Cat.*) Hudson's Brook, Kent Co.; abundant at Fredericton; near St. John and at Norton, on the Kennebeccasis, N.B. (*Fowler, Cat.*) Bathurst, N.B. (*McGill Coll. Herb.*) Sillery, Q. (*St. Cyr.*) Abundant in rich woods, Rivière du Loup, Q. (*Thomas.*) Common along the Rouge River, Argenteuil Co., Q. (*D'Urban.*) Montreal Mountain, 1821. (*Dr. Holmes.*) Very common around Ottawa. (*Fletcher, Fl. Ott.*) Rich woods, common at Prescott, Ont. (*Billings.*) Very common in woods throughout central Ontario. (*Macoun.*) Vicinity of Hamilton, Ont. (*Buchan.*) Rich woods, London, Ont. Parry Sound, Georgian Bay. (*Burgess.*) Woods, Owen Sound, Ont. (*Macoun.*)

(2321.) **E. albidum,** Nutt. Gen. I., 223.

Apparently rare in Ontario. Abundant in a rich low wood, two miles east of Belleville, between the Grand Trunk Railway and the Bay of Quinte, 1878. (*Macoun.*) Steep clay banks of river at "The Cove" London, Ont. (*Burgess.*)

(2322.) **E. propullans,** Gray, Amer. Nat. V., 298.

In rich, deep soil, on the farm of George Casey, M.P., near Fingal, Elgin Co., Ont., 1882. (*Macoun.*)

(2323.) **E. grandiflorum,** Var. (?) **albiflorum.** Hook. Fl. II., 182.

Very abundant in rich woods, and in crevices of rocks, and on old sea beaches throughout the whole southern part of Vancouver Island. A remarkably fine species and well worthy of cultivation. (*Macoun.*) Vicinity of Victoria. (*Fletcher. Hill.*)

Var. (?) **Smithii.** Hook., Fl. II., 182.

E. revolutum, Smith in Rees. Cycl.
E. grandiflorum, var. *revolutum,* Baker, Journ. Linn. Soc. XIV., 296.

Gathered by Menzies on Vancouver Island. Not lately detected unless this may be var. *albiflorum,* which turns pinkish in drying if young specimens are taken.

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Var. **giganteum,** Hook., Fl. II., 182.

Summit of Coast Range, near the Fraser River, B.C., 1877. Stems, three to four flowered. (*Dawson.*) Harrison Lake, B.C. (*Burgess, Herb.*) Flowers, large bright yellow.

Var. (?) **minor,** Morren. Belg. Hort. XXVI., 109.

The specimens referred here are all from high mountain summits, generally one flowered and bright yellow. In moist thickets South Kootanie Pass, 1881, and on the western summit of the North Kootanie Pass, Rocky Mountains, (*Dawson.*) On the summit of Hope Mountain, B.C. (*J. Tolmie.*) Goose Creek Mountains, Cariboo, B.C., 6,000 feet alt. (*Bowman.*) In abundance on mountains around Kicking Horse Lake, and on the beds of snow-slides, passing up to the limit of perpetual snow; in great profusion at the summit of the Selkirks, close to the melting snow, Aug. 24th, 1885; abundant on the summit of Mount Benson, alt. 3,363 feet; occasional specimens on Mount Arrowsmith, alt. 5,500 feet, Vancouver Island. (*Macoun.*)

620. LLOYDIA, Salisb.

(2324.) **L. serotina,** Reichenb. Watson, Proced. Am. Acad., XIV., 261.

Anthericum serotinum, Linn. Hook., Fl. II., 183.

St. Lawrence and Ounalashka islands, Cape Lisburne and Kotzebue Sound. (*Rothr. Alask.*) Northern Arctic coast. (*Dr. Richardson.*)

621. CALOCHORTUS, Pursh, Fl. I., 240.

(2325.) **C. elegans,** Pursh, var. **nanus,** Wood. Proc. Phil. Acad. 168 (1868).

C. elegans, Hook., Fl. II., 183; Macoun, Cat. No. 1873.
C. Lyallii, Baker, Journ. Linn. Soc. XIV., 305.
C. elegans, var. *minor,* Hook., Fl. II., 183.

Summit of the South Kootanie and Crow Nest passes, Rocky Mountains. (*Dawson.*) Recesses of the Rocky Mountains, near the region of perpetual snow. (*Douglas.*)

(2326.) **C. macrocarpus,** Dougl. Hook., Fl. II., 183.

Dry, gravelly soil on the mountains above Lytton, B.C. (*Macoun.*) Very fine specimens at Kamloops, B.C. (*Prof. Fowler.*) Similkameen River; near Wild Horse Creek, Kootanie Valley, B.C. (*Dawson.*) Abundant at Lytton, Spence's Bridge, and Kamloops, B.C. (*Fletcher.*)

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622. CHAMÆLIRIUM, Willd. (DEVIL'S BIT)

(2327.) **C. Carolinianum,** Willd. Watson, Proc. Am. Acad, VI., 282.

C. luteum, Gray, Man. Ed. V., 527.
Helonias dioica, Pursh, Fl. I., 243.

In swamps near Mount Pleasant, Ont. (*Burgess.*) Canada. (*Gray, Man.*)

623. XEROPHYLLUM, Mx. Fl. I., 210. (XEROPHYLLUM)

(2328.) **X. tenax,** Nutt. Watson, Proced. Am. Acad. XIV., 284.

Helonias tenax, Pursh, Fl. I., 243.

South Kootanie Pass, Rocky Mountains, 49th parallel. Abundant and past flowering in the lower valleys, but still flowering at 6,000 feet alt., on Aug. 17th, 1874. Crow Nest Pass, 1883. (*Dawson.*)

624. TOFIELDIA, Huds. (FALSE ASPHODEL)

(2329.) **T. borealis,** Wahlenb. Fl. Lapp., 169.

T. palustris, Huds. Hook., Fl. II., 179.
T. pusilla, Pursh, Fl. I., 246.
Narthecium pusillum, Michx., Fl. I., 209.

Peat bogs and on rocks along the sea or large lakes. Ford's Harbor, Labrador. (*R. Bell.*) Low grounds and peat bogs, Salt Lake, Anticosti. (*Macoun.*) Mingan Islands, River St. Lawrence. (*St. Cyr.*) Lake Mistassini. (*Michaux.*) Lake Mistassini and down the Rupert River to James Bay, and northward on all the islands in James Bay to Cape Jones; Missinaibi River, Ont., and north to Moose Factory. (*J. M. Macoun.*) Hill River and mouth of Churchill River, Hudson Bay. (*R. Bell.*) North shore of Lake Superior. (*Agassiz.*) Rather rare in the Rocky Mountains, at Castle Mountain and Mount Stephen, but abundant at Donald, in the valley of the Wait-a-bit. (*Macoun.*) Great Slave Lake; Ungava, Hudson Strait. (*McGill Coll. Herb.*) Mossy soil, Kingnite, Cumberland Gulf, Cape Searle, and Scott's Bay, west side of Baffin's Bay. (*J. Taylor.*) Between the Mackenzie River and Baffin's Bay. Smith's Sound and Greenland. (*Hooker, Arct. Pl.*) From Labrador and Hudson Bay to Bear Lake River; and west to the Rocky Mountains. (*Hooker, Fl.*) Greenland. (*Lange.*)

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(2330.) **T. coccinea,** Rich. Hook. Fl. II., 179.

Barren ground from lat. 64° to the shores of the Arctic sea; about Jasper's Lake, in the Rocky Mountains, and on the west coast, north of lat. 58°, to Ounalashka. (*Hooker, Fl.*) Kotzebue Sound, Chamisso Island, and Cape Lisburne. (*Rothr. Alask.*) North east coast of America. (*Hooker, Arct. Pl.*)

Var. **major,** Hook., Fl. II., 179.

Mackenzie River. (*Richardson.*) Only two specimens of this variety have been gathered, and the writer has seen no specimens of either form.

(2331.) **T. glutinosa,** Willd. Pursh, Fl. I., 246; Hook., Fl. II., 179.
Narthecium glutinosum, Michx., Fl. I., 210.

Cold bogs and borders of mountain lakes and rivers. Flat lands, Restigouche Co.; along the Upper St. John, Eel and Tobique rivers, N.B. (*Fowler, Cat.*) Salt Lake, and in peat bogs, Anticosti. (*Macoun.*) Mingan Islands, St. Lawrence River. (*St. Cyr.*) Quebec, Island of Orleans. (*Thomas.*) Cleghorn's, Quebec, 1821. (*Dr. Holmes.*) Shore of Georgian Bay at Collingwood. (*Logie.*) Fairview Harbor, Drummond Island, Thompson Point and McLeod Harbor, Georgian Bay. (*J. Bell.*) Wet gravelly river flat, Southampton, Ont. (*Burgess.*) North shore of Lake Superior. (*Agassiz.*) Shore of Lake Huron at Red Bay; Livingstone Point, Lake Nipigon, along the shores of Thunder Bay, and the east coast of Lake Superior. (*Macoun.*) Lake Mistassini, N.E.T. (*J. M. Macoun.*) On the Athabasca river near Fort Assiniboine; Bow River valley, from Calgary westward to Hector at the summit of the Rocky Mountains; abundant around Horne Lake and on the summit of Mount Arrowsmith, Vancouver Island. (*Macoun.*) Rocky Mountains, 49th parallel. (*Dawson.*) Sitka. (*Rothr. Alask.*) Bartlett Bay, Alaska. (*Meehan.*) From Hudson Bay to Bear Lake, and to the Rocky Mountains. (*Hooker, Fl.*)

(2332.) **T. occidentalis,** Watson. Proc. Am. Acad., XIV., 283.

In boggy ground, Beaver Creek valley, near Roger's Pass, Selkirk Mountains, 1885. (*Macoun.*) Easily distinguished from *T. glutinosa* by the long sepals and pedicels which are twice as long in each case.

625. UVULARIA, Linn. Gen. 412. (BELL-WORT)

(2333.) **U. perfoliata,** Linn. Hook., Fl. II., 174; Pursh, Fl. I., 231.
U. perfoliata, var. *minor,* Michx., Fl. I., 199.

Rich woods, but of doubtful occurrence in Canada. The references

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given below are quoted from authorities, but specimens have not been examined. Woods near Prescott, Ont. (*Billings.*) Vicinity of Hamilton, Ont. (*Logie.*)

(2334.) **U. grandiflora,** Smith. Pursh, Fl. I., 231; Hook., Fl. II., 174.
U. perfoliata, var. *major,* Michx., Fl. I., 199.

Rich woods, common in many parts of Quebec and Ontario. Batiscan, Q. (*St. Cyr.*) Gomin's Woods, Quebec. (*Thomas.*) Abundant by roadsides in newly cleared parts of Grenville, Argenteuil Co., Q. (*D'Urban.*) Papineau Road, near Montreal, 1821. (*Dr. Holmes.*) Abundant in the neighborhood of Ottawa. (*Fletcher, Fl. Ott.*) Very abundant in central Ontario. (*Macoun.*) Low rich woods, London, Ont. (*Burgess.*) Woods at Owen Sound, Ont. (*Macoun.*) Lake Huron. (*Hooker, Fl.*)

(2335.) **U. sessilifolia,** Linn. Hook. Fl. II., 175; Pursh, Fl. I., 233.
Oakesia sessilifolia, Watson. Proced. Am. Acad., XIV., 269.

Rich woods, but chiefly in Quebec and New Brunswick. Near Truro, N.S. (*Chambers.*) Truro, and North Woods Annapolis, N.S. (*Macoun & Burgess.*) St. John, and King's Co's.; Lily Lake; Kouchibouguac and Grand Lake, N.B. (*Fowler, Cat.*) Ste. Anne de la Pèrade, Q. (*St. Cyr.*) Papineau Road, near Montreal, 1821. (*Dr. Holmes.*) Quite common in rich woods around Ottawa. (*Fletcher, Fl. Ott.*) Miriwin's Woods, near Prescott, Ont. (*Billings.*) New Brunswick. (*Hooker, Fl.*)

626. DISPORUM, Salisb. in Trans. Hort. Soc. I., 331.

(2336.) **D. Menziesii,** Don.
Uvularia Smithii, Hook., Fl. II., 17[illegible].
Prosartes Menziesii, Don. Linn., Trans. XVIII., 533.

We have never seen Canadian specimens of this species, but Dr. Watson gives its range "from California to British Columbia." Nootka Sound, Vancouver Island. (*Hooker, Fl.*)

(2337.) **D. lanuginosa,** Don.
Prosartes lanuginosa, Don. Macoun, Cat. No. 1836; Gray, Man. Ed. V., 528, (1868).
Uvularia lanuginosa, Pursh. Hook., Fl. 174, in part.
Streptopus lanuginosus, Pursh, Fl. I., 232; Michx., Fl. I., 201.

Rich woods, western Ontario. Woods near Hamilton, Ont. (*Logie.*)

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Rich woods, Norfolk Co., Ont. (*Dr. Nichol.*) Port Dover Junction, Elgin Co., Ont., 1882. (*Macoun.*) Shaded banks, London, Ont. (*Millman. Burgess.*)

(2338.) **D. trachycarpa,** Watson.

Prosartes trachycarpa, Watson. Rep. King's Exp. V., 344; Macoun, Cat. No. 1835.

Uvularia puberula, Rich., App. 10.

U. lanuginosa, Pers. Hook., Fl. II., 174, in part.

U. lanuginosa, var, *major*, Hook., Fl. II., 174.

Generally found in poplar and willow thickets throughout the prairie region. Slopes of the South Kootanie Pass, Rocky Mountains. (*Dawson.*) Thickets along the Cypress Hills, N.W.T. (*J. M. Macoun.*) Not uncommon at Manitoba House, Lake Manitoba; on slopes of the Porcupine Mountains; sand hills at the source of the Qu'Appelle; rather common in the foot-hills of the Rocky Mountains and westward to Kananaskis station. (*Macoun.*) In thickets near Regina, Assiniboia. (*Fletcher.*) Wooded country from Lake Winnipeg to the Rocky Mountains, and from Norway House to Cumberland House. (*Hooker, Fl.*)

(2339.) **D. Hookeri,** Torr.

Prosartes Hookeri, Torr. Pacif. R. Rep., IV., 144; Macoun, Cat. No. 1834.

The specimens placed under this species are unlike any form we have of *D. Oregana.* They are charcterized by perfectly smooth fruit (half-grown), and, in flowering specimens, by the smooth style and nearly glabrous ovary. Not uncommon in woods at Donald, in the Columbia Valley, and westward in Beaver Creek Valley to Roger's Pass, Selkirk Mountains; also at Quesnel, and Soda Creek, B.C., 1875. (*Macoun.*) Mountain slopes at Spence's Bridge, and Yale, B.C. (*Fletcher.*)

(2340.) **D. Oregana,** Watson.

Prosartes Oregana, Watson. Proced. Am. Acad., XIV., 271.

Uvularia lanuginosa, Hook., Fl. II., 174, in part.

Rich low woods. Apparently common in the rich woodlands throughout Vancouver Island, as far north as Qualicum and Alberni. All the island specimens have very hairy fruit even when fully ripe. Specimens exactly similar were gathered at New Westminster, B.C., 1875. (*Macoun.*) Eastern base of Coast Range, on Skagit River, B.C., 1877. Glenora, Stikine River, 1887. (*Dawson.*) Vicinity of Victoria, Vancouver Island. (*Meehan.*) North West coast. (*Hooker, Fl.*)

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627. CLINTONIA, Rafin. (CLINTONIA)

(2341.) **C. borealis,** Raf. Gray, Man. Ed. V., 529.

Smilacina borealis, Pursh, Fl. I., 232; Hook., Fl. II., 175.

Rich cool woods, abundant chiefly eastward. Labrador. (*Butler.*) Brigus, Newfoundland. (*R. Bell.*) New Harbor, Trinity Bay, Newfoundland. (*Rev. A. Waghorne.*) Windsor, Halifax, Pictou, and Canso, Guysboro Co., N.S. (*Sommers, Cat.*) Bedford, N.S. (*McGill Coll. Herb.*) Rich woods, Truro, and Windsor, N.S. (*Macoun.*) St. John and King's Co's.; St. John city; Kouchibouguac; along the Tobique River; Bald Mountain and between Pabineau, and Grand Falls, N.B. (*Fowler, Cat.*) Bathurst, N.B. (*McGill Coll. Herb.*) Woods, Salt Lake, Anticosti, and on the Gaspé coast. (*Macoun.*) Ouatchechou, Island of Orleans, and Mingan Islands, River St. Lawrence. (*St. Cyr.*) Savanne and other places near Montreal, 1821. (*Dr. Holmes.*) Rich woods at Rivière du Loup, Q. (*Thomas.*) Very abundant in Argenteuil Co., Q. (*D'Urban.*) Murray Bay, St. Lawrence River. (*McGill Coll. Herb.*) Cool woods, vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Low wet woods and cedar swamps, central Ontario; common. (*Macoun.*) Somewhat common at Prescott, Ont. (*Billings.*) Vicinity of Hamilton, Ont. (*Buchan.*) Low woods, London, Ont., and Parry Sound, Georgian Bay. (*Burgess.*) Owen Sound, Mississagui Island, Cockburn Island, and Hilton, Georgian Bay. (*J. Bell.*) In many places around Lake Superior and Lake Nipigon, and westward on the Dawson route to Lake of the Woods. (*Macoun.*) Lake Mistassini, and down the Rupert River to James Bay; Lake Winnipeg and eastward down the Severn River; also down the Missinaibi River. (*J. M. Macoun.*) New Brunswick; Newfoundland; Canada to the Saskatchewan. (*Hooker, Fl.*)

(2342.) **C. uniflora,** Kunth. Baker, Journ. Linn. Soc., XIV., 584.

Smilacina uniflora, Menzies. Hook., Fl. II., 175; Macoun, Cat. No. 1847.

Cool shady woods, from the Rocky Mountains to Vancouver Island. South Kootanie Pass, and Kootanie Valley, Rocky Mountains; Tanyabunkat Lake, B.C. (*Dawson.*) Goose Creek Mountains, Cariboo, B.C., alt. 5,800 feet. (*Bowman.*) Rather uncommon in mountain woods, from Hector, Rocky Mountains, westward through British Columbia and northward to Fort McLeod, lat. 55°; rather rare on Vancouver Island, only observed on Mount Mark, alt. 2,750 feet. (*Macoun.*) Yale Mountain, B.C. (*Fletcher.*) North West America, and on the mountains of the interior. (*Hooker, Fl.*)

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628. MEDEOLA, Linn. Gen. 455. (INDIAN CUCUMBER.)

(2343.) **M. Virginica,** Linn. Michx., Fl. I., 214; Pursh, Fl. I., 244; Hook., Fl. II., 179.

Rich woods, rather common; but seldom seen in abundance anywhere. Windsor, Dartmouth, Halifax, and Pictou, N.S. (*Sommers, Cat.*) Truro, and North Woods, Annapolis, N.S. (*Macoun.*) Woodlands, Glenelg, Guysborough Co., N.S. (*Faribault.*) Bathurst, N.B. (*McGill Coll. Herb.*) Kouchibouguac, and Bass River; St. John, N.B. (*Fowler, Cat.*) Campbellton, and Hampton, N.B. (*Chalmers.*) Island of Orleans. (*Thomas.*) Very abundant in rocky and sandy woods, Argenteuil Co., Q. (*D'Urban.*) In a swamp, Montreal Mountain, 1821. (*Dr. Holmes.*) Rich woods, around Ottawa. (*Fletcher, Fl. Ott.*) Woods at Prescott, Ont.; common. (*Billings.*) Rich deep woods, rather uncommon, in central Ontario. (*Macoun.*) Woods near Lake Medad, Hamilton, Ont. (*Logie.*) Low rich woods, London, Ont., and Parry Sound, Georgian Bay. (*Burgess.*) London, and Komoka, Ont. (*Millman.*) Owen Sound, and Hilton, Ont. (*J. Bell.*) St. Joseph Island, Georgian Bay. (*R. Bell.*)

629. TRILLIUM, Linn. Gen. 456. (THREE-LEAVED NIGHTSHADE.)

(2344.) **T. erectum,** Linn., var. **atropurpureum,** Hook. Fl. II., 180; Pursh, Fl. I., 245.

T. rhomboideum, var. *atropurpureum,* Michx., Fl. I., 215.
T. obovatum, Pursh, Fl. I., 246. (Montreal plant.)

Low rich woods by the borders of swamps. Halifax, and near Rockhead; Hall's Harbor, King's Co., N.S. (*Sommers, Cat.*) Woods, Cape Blomidon, N.S. (*Macoun.*) Common about St. John, Loch Lomond, and St. Croix River; Upper St. John River and its tributaries, Norton, Tobique, near Pokiok, and Bald Mountain; rare in the northern counties of N.B. only reported from Restigouche. (*Fowler, Cat.*) Island of Orleans. (*St. Cyr.*) Papineau Road, near Montreal, 1821. (*Dr. Holmes.*) Rivière du Loup, Q. (*Thomas.*) Abundant in low woods, Argenteuil Co., Q. (*D'Urban.*) Vicinity of Ottawa; common. (*Fletcher, Fl. Ott.*) Common at Prescott, Ont. (*Billings.*) Very common throughout central Ontario in wet woods; northward it is found on drier soil, as at North

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Bay, Lake Nipissing. (*Macoun.*) Woods, near Hamilton, Ont. (*Logie.*) Rich woods, London, Ont. (*Burgess.*) St. Joseph Island, Georgian Bay. (*J. Bell.*) Port Colborne, Ont. (*McGill Coll. Herb.*) Owen Sound, and in woods up the Kaministiqua River, west of Lake Superior. (*Macoun.*)

Var. **album,** Pursh, Fl. I., 245; Hook, Fl., II., 180.

Occasionally detected in low woods growing with the species. Eel River, Carleton Co., N.B. (*Fowler, Cat.*) Ironsides, Ottawa Co., Q. (*J. M. Macoun.*) Occasionally found with the species, and wherever it occurs about Ottawa. (*Fletcher.*) Gomin-Wood, near Quebec. (*St. Cyr.*) On limestone near Gate Lake, Argenteuil Co., Q. (*D'Urban.*) In low wet woods three miles east of Belleville, between the railway and the Bay of Quinte; low thicket, Cold Creek, Northumberland Co., Ont.; also woods at Owen Sound, Ont. (*Macoun.*) Vicinity of Hamilton, Ont. (*Buchan.*)

Var. **ochroleucum,** Hook., Fl. II., 180.

Canada. (*Hooker, Fl.*) While exploring North Mountain, near Annapolis, N.S., a few years since, a couple of specimens of this variety were gathered. They are smaller flowered than the type, but generally resemble it.

Many years ago the writer obtained specimens of a form with *green* petals, which had been gathered in the county of Peterboro, Ont. Nothing has been heard of it for the last twenty years.

Var. **declinatum,** Gray, Man. Ed. V., 523.

T. cernuum, Watson. Proced. Am. Acad., Vol. XIV., 275 in part.

Campbellton, N.B. (*Chalmers.*) North shore of Lake Superior; at the mouth of Nipigon River and in the woods up the Kaministiqua; also in abundance at Totogon, at the southern end of Lake Manitoba. (*Macoun.*) London, Ont.; rare; also at Emerson, Man. (*Burgess.*) Missinaibi River, near James Bay. (*J. M. Macoun.*) Moose Factory, James Bay. (*Cottar & Dr. Hayden.*) From the Saskatchewan to the Mackenzie River. (*Hooker, Fl.*)

In my opinion if this is not a distinct species its proper place is as the western and northern form of *T. cernuum.* When fresh the two forms are very distinct. The peduncle in *T. cernuum* is short and *recurved,* while in this it is twice as long as in *cernuum* and merely *declined.* The habitat of *T. cernuum* is alluvial flats, while that of the variety is low damp woods, without reference to streams. The species is scented while the variety is scentless, and the flowers of the former are not half

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as large as those of the latter. The two may grow in the same districts but not together. Dr. Watson disagrees with me and believes its place is with *T. erectum*, and in deference to him I place it there.

(2345.) **T. grandiflorum,** Salisb.; Pursh, Fl. I., 246; Hook., Fl. II., 180.

T. rhomboideum, var. *grandiflorum*, Michx., Fl. I., 216.
T. camtschaticum, Pursh, Fl. I., 246.

Not uncommon in rich woods in Ontario. Vicinity of Montreal, 1814. (*Pursh.*) Townships of Grenville and Wentworth, Argenteuil Co., Q. (*D'Urban.*) Very abundant on King's Mountain and other places near Ottawa. (*Fletcher, Fl. Ott.*) Very common at Prescott, Ont. (*Billings.*) Abundant throughout central Ontario. (*Macoun.*) Very common in woods at Hamilton, Ont. (*Logie.*) Rich woods, London, Ont. (*Burgess.*) Woods at Owen Sound, Ont. (*Macoun.*)

(2346.) **T. ovatum,** Pursh, Fl. I., 245; Hook., Fl. II., 180.

T. grandiflorum, Hook., Fl. II., 180, in part.

Rich woods in the Fraser Valley, from Yale to the coast, and not rare in rich, shady woods on Vancouver Island, from Victoria to Qualicum and Alberni. (*Macoun.*) Vicinity of Victoria. (*Hill. Fletcher.*)

(2347.) **T. cernuum,** Linn.; Hook., Fl. II., 180; Pursh, Fl. I., 245.

Chiefly in rich low woods, and intervale lands of river bottoms. Newfoundland. (*Cormack.*) Pictou, N.S. (*McKay.*) In woods, Truro, N.S. (*Macoun & Burgess.*) Rothesay, N.B. (*Matthews.*) Gallows Hill, near Napan, Northumberland Co.; Bass River, and Oxbow, on Salmon River; St. Francis, Kennebeccasis and Norton; Tobique, at Two Brooks, N.B. (*Fowler, Cat.*) Bathurst, N.B. (*McGill Coll. Herb.*) River Ste. Anne des Monts, Q. (*Macoun. Porter.*) In rich woods, Rivière du Loup, Q. (*Thomas.*) Island of Orleans. (*St. Cyr.*) Vicinity of Montreal, 1821. (*Dr. Holmes.*) Billings Bridge, the only locality near Ottawa. (*Fletcher, Fl. Ott.*) Woods along Bell's Creek, three miles east of Belleville, Hastings Co.; Cold Creek flats rear of Esli Terril's farm, Brighton, Northumberland Co., Ont. (*Macoun.*) St. Joseph Island, Georgian Bay. (*J. Bell.*)

(2348.) **T. erythrocarpum,** Michx., Fl., I., 216; Hook. Fl., II., 180.

T. pictum, Pursh, Fl. I., 244; Holmes, Cat. Montreal Plants.

Rich and cool woods, rather local in its distribution. Windsor, Halifax, Pictou, and Pirate's Harbor, Guysboro Co., N.S. (*Sommers, Cat.*) Woods, Glenelg, Guysboro Co., N.S. (*Faribault.*) Common, especially on recently burned ground in northern counties; St. John

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and King's Co's.; also St. John city, N.B. (*Fowler, Cat.*) Portland, N.B. (*Matthews.*) In woods, Gaspé Basin, Q. (*Macoun.*) Island of Orleans. (*St. Cyr.*) In rich woods, Rivière du Loup, Q. (*Thomas.*) Papineau Wood, near Montreal, 1821. (*Dr. Holmes.*) Abundant in rocky woods, Argenteuil Co., Q. (*D'Urban.*) Local at Ottawa, (*Fletcher, Fl. Ott.*) Somewhat rare at Prescott, Ont. (*Billings.*) North Bay, Lake Nipissing, and at Collingwood, Georgian Bay. (*Macoun.*) St. Remi, Q.; and Kemptville, Ont. (*McGill Coll. Herb.*) Rich woods, Hatchley, Ont; Port Cockburn, Lake Joseph, Muskoka Co., Ont. (*Burgess.*)

630. MELANTHIUM, Linn. Gen. 454.

(2349.) **M. Virginicum,** Linn.; Gray, Man. Ed. V., 524.

M. hybridum, Pursh, Fl. I., 242.
Leimanthium hybridum, Rœm.; Hook., Fl. II., 177.

Upper Canada. (*Hooker, Fl.*) We have never seen a Canadian specimen of this species, and cannot speak explicitly of its occurrence in western Ontario. Certainly the region where Mr. Goldie botanized (the shores of Lake Erie) is less known botanically, than any other part of the Dominion, except the extreme north.

631. VERATRUM, Linn. Gen. 1144. (FALSE HELLEBORE.)

(2350.) **V. viride,** Ait.; Pursh, Fl. I., 242; Hook. Fl. II. 178.

V. album, Michx., Fl. I., 249; Macoun, Cat. No. 1829.
V. Eschscholtzii, Gray; Rothr. Alask. 456.
V. album, var. *Eschscholtzii,* Dawson, Bound. Rep. 374.

Rather common on intervales of the Restigouche, Richibucto, St. John, and Kennebeccasis rivers, N.B. (*Fowler, Cat.*) In numerous places along the Gaspé coast, from Mont Louis to Metis. (*Macoun.*) Island of Orleans, Q. (*St. Cyr.*) Very common at Rivière du Loup, Q. (*Thomas.*) South Kootanie Pass and foothills of Rocky Mountains, 49th parallel. (*Dawson. Burgess.*) In mountain swamps and on snow-slides from Castle Mountain, in the Rocky Mountains, westward to the Selkirks and mountains in the Peace River Pass, lat. 56°; on mountain slopes and in river valleys, Mount Finlayson, Mount Benson, Mount Arrowsmith, and Mount Mark; also at Goldstream, Nanaimo, Qualicum and Alberni, Vancouver Island. (*Macoun.*) Sooke, Vancouver Island.

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(*Fletcher.*) Sitka. (*Rothr. Alask.*) Canada to the Saskatchewan and the Rocky Mountains, and from the Columbia to the Stikine. (*Hooker, Fl.*) Snow Shoe Valley, Cariboo, B.C., alt. 3,000 feet. (*Bowman.*)

632. STENANTHIUM, A. Gray. Ann. Lyc. N. York IV., 119.

(2351.) **S. occidentale,** Gray, Proced. Am. Acad., XVIII., 405.

Crow Nest and South Kootanie passes, Rocky Mountains. (*Dawson.*) Abundant on the slopes of ravines on all the Rocky Mountains up the Bow River Valley, and westward to the Columbia Valley at Donald; along Little Qualicum River, on the slopes of Mount Arrowsmith, alt. 4,500 feet, and on Mount Mark, alt. 2,500 feet, Vancouver Island. (*Macoun.*) Near Yale, B.C. (*Fletcher.*)

633. ZYGADENUS, Michx. Fl. I., 213. (ZYGADENE.)

(2352.) **Z. elegans,** Pursh, Fl. I., 241; Hook., Fl. II., 178.

Z. glaucus, Nutt.; Hook., Fl. II., 178; Macoun, Cat. No. 1826.

Z. chloranthus, Richards; Hook., Fl. II., 177.

Rather rare along river banks eastward but abundant on the prairies and westward to the Pacific. Sand beach at Belledune, N.B. (*Fowler, Cat.*) Salt Lake, Anticosti, and on cliffs along the Gaspé coast. (*Macoun.*) Mingan Islands and Anticosti. (*St. Cyr.*) Murray Bay, River St. Lawrence. (*McGill Coll. Herb.*) Bank of the Moira and in a field near Belleville; rocky banks Shannonville, and swamp three miles south of Marmora, Hastings Co.; marsh at Chicken Bay, Lake Huron. (*Macoun.*) Island Harbor, and Drummond Island, Georgian Bay. (*J. Bell.*) Shaded river bank, Southampton, and Elora, Ont. (*Burgess.*) Very common throughout the prairie region extending westward through the Rocky Mountains to the Columbia Valley at Donald. (*Macoun.*) Near Turtle Mountain and westward on the 49th parallel to the Milk River, and Crow Nest Pass in the Rocky Mountains. (*Dawson.*) Fort Selkirk, Yukon River, lat. 62° 45'. (*Schwatka.*) Kotzebue Sound, Port Clarence, Arctic coast and Fort Yukon. (*Rothr. Alask.*) Banks of the St. Lawrence, around Niagara Falls, and on the borders of Lakes Erie and Huron. In the valleys of the Rocky Mountains near the sources of the Columbia and on the banks of the Saskatchewan and Red rivers. (*Hooker, Fl.*)

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(2353.) **Z. venenosus,** Watson, Proced. Am. Acad., XIV., 279.

Z. Nuttallii, Gray ; Macoun, Cat. No. 1827.
Leimanthium Nuttallii, Hook., Fl. II., 177.

Quite common on the upper slopes of the Cypress Hills and westward through the foot-hills to Castle Mountain in the Rocky Mountains. (*Macoun.*) Wood Mountain, 49th parallel, 1874. (*Millman. Burgess.*) Kamloops, B.C. (*Prof. Fowler.*) Lytton, B.C. (*Hill.*) Milk River Ridge, Alberta; Nicola Valley, and Drew Harbor, B.C. North point of Texada Island, Gulf of Georgia. (*Dawson.*) Abundant in the Fraser Valley; and around Victoria, Vancouver Island. (*Fletcher.*) Very abundant in the southern part of Vancouver Island, and extending to Qualicum and Alberni. (*Macoun.*) Locally named "Poison Camass," as the bulb is poisonous.

(2354.) **Z. paniculatus,** Watson, Rep. King's Exp. V., 344.

Helonias paniculata, Nutt., Journ. Phil. Acad., VII., 57.

Apparently rare, on the great plains, as none of our collectors, so far as I am aware, have even gathered the plant. According to Dr. Watson it ranges from Nevada to the Saskatchewan.

CVIII. PONTEDERIACEÆ. Pickerel-weed Family.

634. PONTEDERIA, Linn. (PICKEREL-WEED.)

(2355.) **P. cordata,** Linn.; Hook., Fl. II., 187.

Frequent in ponds and by lake margins. Marshes near Cape Blomidon, N.S. (*Macoun.*) Windsor, Halifax, Pictou, Mahone Bay and Truro, N.S. (*Sommers, Cat.*) Shallow water, Caledonia, Guysboro Co., N.S. (*Faribault.*) Kennebeccasis, near the railway station, Fredericton, Grand Lake, several places on the St. John River, Tobique Lake, Norton, Clifton Lake, and common in western parts of Charlotte Co., N.B. (*Fowler, Cat.*) Port St. Francois, Nicolet, Q. (*St. Cyr.*) Lake St. Augustine, Q. (*Thomas.*) Very abundant in small lakes near Lake of the Three Mountains, and in sheltered parts of Trembling Lake, Argenteuil Co., Q. (*D'Urban.*) Mouth of River St. Pierre, near Montreal, 1821. (*Dr. Holmes.*) Nation, Rideau and Ottawa rivers, near Ottawa. (*Fletcher, Fl. Ott.*) In streams inland, from Prescott northward; very common. (*Billings.*) Common in all slow-flowing rivers and lakes, and ponds throughout the northern counties of

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Ontario. (*Macoun.*) Burlington Beach, Hamilton, Ont. (*Logie.*) Moon River, Muskoka Co., Ont., and Parry Sound, Georgian Bay. (*Burgess.*) St. Joseph Harbor, Georgian Bay. (*J. Bell.*) From Lake Huron to the Saskatchewan. (*Hooker, Fl.*)

Var. **angustifolia,** Gray, Man. Ed. V., 545.

P. angustifolia, Pursh, Fl. I., 224.

This variety is very distinct from the species if the form of the leaf only is considered. The St. Clair specimens have leaves fully eight inches long and not at all cordate at the base. Many of the references given with the species very likely belong here, but we have no means of determining without the specimens. Shallow water, Norton, N.B. (*Hay.*) St. Clair River, Ont. (*J. M. Macoun.*) Still water, Trent River, above Heely Falls, Northumberland Co.; and Lake Isaac, Bruce Peninsula, Ont. (*Macoun.*) In water at Parry Sound, Georgian Bay. (*Burgess.*)

635. HETERANTHERA, Ruiz. (WATER-STAR GRASS.)

(2356.) **H. graminea,** Vahl.; Pursh, Fl. I., 32.

Leptanthus gramineus, Michx.; Hook., Fl. II., 187.
Schollera graminea, Willd.; Gray, Man. Ed. V., 545; Macoun, Cat. No. 1906.

Abundant at Ottawa. (*Fletcher, Fl. Ott.*) In gravel along the north shore of Lake Ontario and the Bay of Quinte, at Belleville, and at Weller's Bay, Prince Edward Co., Ont. (*Macoun.*) Vicinity of Hamilton, Ont., on the lake shore. (*Buchan.*) On the lake shore at Kingston, Ont. (*Burgess.*)

CIX. XYRIDEÆ. YELLOW-EYED-GRASS FAMILY.

636. XYRIS, Linn. (YELLOW-EYED GRASS.)

(2357.) **X. flexuosa,** Muhl., var. **pusilla,** Gray, Man. Ed. V., 548.

X. Caroliniana, Pursh, Fl. I., 33, in part.
X. Jupacai, Michx., Fl. I., 23, in part.

This form is easily distinguished from the species by being *without* the bulbous base. The writer believes it to be a distinct species and wholly separate from *X. flexuosa.* Peat bogs and wet sandy shores in

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the northern forest region of Ontario and the eastern provinces. Halifax, N.S. (*Sommers, Cat.*) Peat bogs, Guysboro Co., N.S. (*Robert.*) Kendrick's Lake, near St. Stephen; Point de Bute, Westmoreland Co., N.B. (*Fowler, Cat.*) Blackstone Lake, and Port Cockburn, Lake Joseph, Muskoka Co., Ont. (*Burgess.*)

CX. JUNCACEÆ. Rush Family.

637. JUNCUS, Linn. Gen. 437. (RUSH, BOG-RUSH.)

(2358.) **J. effusus,** Linn.; Hook., Fl. II., 190.

Frequent in ditches and boggy places throughout the eastern provinces; Brigus, Newfoundland. (*R. Bell.*) Windsor, Bedford, and Pictou, N.S. (*Sommers, Cat.*) Magdalen Islands, Gulf of St. Lawrence. (*J. Richardson.*) Truro, Halifax, Annapolis and Yarmouth, N.S.; also in the river valley at Whycocomagh, Cape Breton. (*Macoun.*) Abundant in marshy ground, New Brunswick. (*Fowler, Cat.*) Pentecost River, Levis, and Ragged Islands, River St. Lawrence. (*St. Cyr.*) Ditches in McKay's Woods and other places at Ottawa. (*Fletcher, Fl. Ott.*) Very common around Prescott, Ont. (*Billings.*) Abundant throughout central Ontario. (*Macoun.*) Vicinity of Hamilton, Ont. (*Buchan.*) In low swampy grounds near London, Ont. (*Burgess.*) Ditches at Owen Sound, and in meadows at Fort William and westward up the Kaministiqua River. (*Macoun.*) Lake Wabatongwashene, Ont.; York Factory, Hudson Bay. (*R. Bell.*) Moose Factory, James Bay. (*Cottar & Hayden.*) Rather common in springy places throughout the southern half of Vancouver Island, extending to Qualicum, and Barclay Sound. (*Macoun.*)

Var. **brunneus,** Engelm. Proc. Calif. Acad. II., 491.

Abundant on the islands in Barclay Sound, west coast of Vancouver Island, 1887. (*Macoun.*)

Var. **conglomeratus,** Gray, Man. Ed. V., 537.

In the same situations as the species, but less common. Not common in low grounds at Annapolis, N.S., and at Whycocomagh, Cape Breton. (*Macoun.*) Fredricton, N.B., and elsewhere; not common. (*Fowler, Cat.*)

(2359.) **J. filiformis,** Linn.; Hook., Fl. II., 190.

Rather common along river margins, in gravel, and on lake shores;

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widely diffused. Bedford, near Halifax, N.S. (*Sommers, Cat.*) Low meadows, North Sydney, Cape Breton. (*Burgess.*) Truro, and Yarmouth, N.S. (*Macoun.*) Magdalen Islands, Gulf of St. Lawrence. (*J. Richardson.*) Richibucto, Kouchibouguac, Woodstock and Salmon River, N.B. (*Fowler, Cat.*) Wet meadows, Gaspé Basin, Q. *Macoun.*) Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Border of Black Creek, Grimsthorpe, Hastings Co.; abundant at Elliott's Falls, Gull River, Victoria Co., Ont.; White River, north of Lake Superior; in wet meadows, Fort William, Thunder Bay. (*Macoun.*) Lake Mistassini, N.E.T., and Fort George, James Bay. (*J. M. Macoun.*) Moose Factory, James Bay. (*Cottar & Dr. Hayden.*) Shore of Little Slave Lake and along the Saskatchewan at Fort Carleton, and along Bow River, above Calgary; in a boggy spot on the "Tote Road," one mile west of the Selkirk summit, B.C., 1885. (*Macoun.*) Saskatchewan River to Bear Lake and English River. (*Hooker, Fl.*) Southern Greenland. (*Hook., Arct. Pl.*)

(2360.) **J. Balticus,** Var. *β.* **littoralis,** Engelm., Mon. Junc. 442.

J. Balticus, Dethard.; Hook., Fl. II., 180.
J. glaucus, Rich., App. page 11.

Sandy shores of lakes and by the sea; not rare. Pictou, N.S. (*McKay.*) Along the coast at Yarmouth and Truro, N.S. (*Macoun.*) Common on the coast of Kent Co., N.B. (*Fowler, Cat.*) Along the coast of Anticosti, at Salt Lake and Jupiter River; Gaspé Basin and along the coast to Matane, Q. (*Macoun.*) Mingan Islands, River St. Lawrence. (*St. Cyr.*) Along the St. Lawrence River at Prescott, Ont.; rare. (*Billings.*) Abundant at West Lake, Prince Edward Co. and around Presqu'ile Point, Lake Ontario, and five miles north of Trenton, Northumberland Co., Ont.; Point aux Pins, Sault Ste. Marie, and along the north-east coast of Lake Superior; Poplar River, Lake Nipigon and westward. (*Macoun.*) Sandy shore of Toronto Island, and at Southampton, Lake Huron. (*Burgess.*) Fort George, James Bay. (*J. M. Macoun.*) North end of Lake Winnipeg, and Knee Lake, Keewatin. (*R. Bell.*) The panicle of the sea coast form is much more compact than that from the Great Lakes.

Var. *γ.* **montanus,** Engelm., Mon. Junc., 442.

J. Balticus, Hook., Fl. II., 189, in part.

This form is abundant throughout the prairie region, extending from the eastern border at Red River across the prairies and through the Rocky Mountains to Donald on the Columbia. (*Macoun.*) Saskatchewan River near the mountains, and at Little Slave Lake. (*Hooker, Fl.*)

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(2361.) **J. Lescurii,** Bolander, Bot. Calif., Vol. II., 205.

J. Balticus, var. *Pacificus*, Engelm., Mon. Junc., 442.

Our own specimens and those of Dawson, of this species, collected on Vancouver Island, are easily separated from those of the closely related *J. Balticus*, by their seeds, which are of a lighter color and less apiculate, and by their brown margined perianth scales. Abundant in salt marshes and on sand along the coast of Vancouver Island; near Victoria, Nanaimo, Departure Bay, Qualicum, Comox, and Alberni. (*Macoun.*) Blenkinsop Bay, Vancouver Island, 1885; Lewis River, lat. 61° north of British Columbia. (*Dawson.*) All references to *J. Balticus* on the Pacific coast are placed below.

North West America. (*Hooker, Fl.*) Cape Espenberg, Norton Sound, and Ounalashka. (*Rothr. Alask.*) Fort Wrangel, Alaska. (*Meehan.*)

(2362.) **J. arcticus,** Willd.; Hook., Fl. II., 189, in part.

We know nothing of this species. Arctic sea-coast. (*Hooker, Fl.*) Mossy soil, Middliattwack Islands, Cumberland Gulf, and Scott's Bay. (*J. Taylor.*) Greenland. (*Hook. Arct. Pl.*)

Var. **Sitchensis,** Engelm., Mon. Junc., 445.

Engelmann says that this variety is found on both sides of Behring Straits and on the island of Kodiak. Bartlett Bay Alaska. (*Meehan.*) Sitka. (*Rothr. Alask.*) Point Mulgrave, Behring Straits. (*Hooker, Fl.*)

(2363.) **J. Drummondii,** E. Meyer. Ledeb. Flor. Ross. IV., 235.

J. arcticus, var. *β. gracilis*, Hook., Fl. II., 189.

Quite common on the higher Rocky Mountains, from Castle Mountain westward; appearing again on all the high mountains about the sources of Bear Creek, Selkirk Mountains. (*Macoun.*) At a great elevation in the Rocky Mountains. (*Hooker, Fl.*) Western summit of the North Kootanie Pass, Rocky Mountains. (*Dawson.*) Ounalashka. (*Rothr. Alask.*)

(2364.) **J. Parryi,** Engelm., Mon. Junc., 446.

J. arcticus, var. *gracilis ?* Gray in Pl. Parry, 34.

On the western summit of the North Kootanie Pass, and on the summit of the South Kootanie Pass, Rocky Mountains. (*Dawson.*) On the grassy summits of the mountains near the Glacier Hotel, Selkirk Mountains. Specimens over a foot high and having all the characters of this species were gathered in quantity during the past summer (1887) on Mount Benson and Mount Mark, alt. 3,000 feet, and on Mount Arrowsmith, alt. 5,000 feet, Vancouver Island. (*Macoun.*)

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2365.) **J. trifidus,** Linn.; Engelm., Mon. Junc. 447.

Mountain summits or far north. Newfoundland. (*Engelmann.*) Summit of Mount Albert, Gaspé, Q., alt. 4,000 feet, 1882. (*Macoun. Porter.*) Southern Greenland. (*Hook. Arct. Pl.*)

(2366.) **J. biglumis,** Linn.; Hook., Fl. II., 192.

Arctic sea-coast and islands; Rocky Mountains, north of Smoking River; Bay of Good Hope, Behring Straits. (*Hooker, Fl.*) Kotzebue Sound. (*Rothr. Alask.*) Port Kennedy, Boothian Peninsula. (*Dr. Walker.*) Coast to snow line on both sides of Baffin Bay. (*J. Taylor.*) Greenland. (*R. Brown.*)

(2367.) **J. triglumis,** Linn.; Hook., Fl. II., 192.

Mountain summits and Arctic coasts. Ungava Bay, Labrador coast. (*Barnston.*) In mountain woods, along streams on mud at Castle Mountain and Kicking Horse Lake, Rocky Mountains. (*Macoun.*) Fort George and the South Twin Island, James Bay. (*J. M. Macoun.*) Arctic sea-coast; alpine swamps in the Rocky Mountains. (*Hooker, Fl.*) Greenland. (*R. Brown.*)

(2368.) **J. stygius,** Linn.; Engelm., Mon. Junc., 448.

Peat bogs, and northward rather rare or seldom collected. Peat bogs at Richibucto and Point Escuminac, Andover and Salmon River, and near St. John, N.B. (*Fowler, Cat.*) Campbellton, N.B. (*Chalmers.*) Dalhousie, N.B. (*Fletcher*) Peat bog, Salt Lake, Anticosti. (*Macoun.*) Newfoundland. (*Engelmann.*)

(2369.) **J. castaneus,** Smith; Hook., Fl. II., 192.

Mountain summits and Arctic shores. Ungava Bay, Labrador coast. (*Barnston.*) Ellis Bay, Anticosti. (*St. Cyr.*) Abundant along the Bow River at Castle Mountain, and westward in the river valley and over the summit to Kicking Horse Lake, where it is particularly abundant, 1885. (*Macoun.*) Lewis River, lat. 61° north of British Columbia. (*Dawson.*) York Factory, Hudson Bay; Edmonton on the Saskatchewan, and west to the Rocky Mountains, thence to Bear Lake; North West coast, from Ounalashka to Kotzebue Sound. (*Hooker, Fl.*) Grows where water has stood in the early part of the season, west side of Cumberland Gulf. (*J. Taylor.*) Greenland. (*R. Brown.*)

(2370.) **J. Vaseyi,** Engelm., Mon. Junc., 488.

Wet or damp meadows, chiefly in the prairie region. Meadows at the Pic, Lake Superior, and on Flat Rock Portage, Lake Nipigon; not

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uncommon on the prairies as far west as Brandon. As this species has a close resemblance to *J. tenuis*, it is probable that it is often passed over for that species. On the Saskatchewan. (*Bourgeau.*) Island of Orleans. (*St. Cyr.*)

(2371.) **J. Greenii,** Oakes & Tuckerm. Sill. Journ. 45 (1843.)

Very likely rare in all parts of Canada, or may be overlooked as a form of *J. tenuis*. Wet sandy places, Kouchibouguasis, Kent Co., N.B. (*Fowler, Cat.*) Wet sand, shore of Hog Lake, North Hastings, Ont. (*Macoun.*) Sandy shore and crevices of rocks, Port Cockburn, Lake Joseph, Muskoka Co., Ont. (*Burgess.*)

(2372.) **J. tenuis,** Willd.; Hook., Fl. II., 191; Pursh, Fl. I., 238.

J. bicornis, Pursh, Fl. I., 236; Michx., Fl. I., 191.

Rather common from the Atlantic to the Pacific, usually in boggy pastures or along old roads in woods. On Halifax Common, N.S. (*Sommers.*) Common at Truro, Windsor and Yarmouth, N.S. (*Macoun.*) Wet places, Goldenville, Guysboro Co., N.S. (*Faribault.*) Common; Hopewell Cape, and Andover, N.B. (*Fowler, Cat.*) Valcartier and Beaumont, Q. (*St. Cyr.*) Hamilton's Farm, Argenteuil Co., Q. (*D'Urban.*) Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Common at Prescott, Ont. (*Billings.*) Abundant in wet meadows in central Ontario. (*Macoun.*) Neighborhood of Hamilton, Ont. (*Logie.*) Niagara Falls, and low grounds at London, Ont. (*Burgess.*) Wet meadows, Owen Sound; Little Flat Rock Portage, Lake Nipigon; very abundant throughout the prairie region and northward in the mixed forest country to the Peace River. (*Macoun.*) Kabinakagami Lake, Ont.; Oxford House and Nelson River, Keewatin. (*R. Bell.*) Lake Mistassini, N.E.T.; Severn River, Keewatin; and Souris River, Man. (*J. M. Macoun.*) Rather common in meadows and damp pastures in many parts of Vancouver Island, especially around Victoria. (*Macoun.*) Pitt River, B.C. (*Hill.*) Lake Huron to Bear Lake, and from Hudson Bay to the sources of the Columbia in the Rocky Mountains. (*Hooker, Fl.*)

Var. β. **secundus,** Engelm., Mon. Junc., 450.

Apparently rare or seldom collected. Bass, and Salmon rivers, N.B. (*Fowler, Cat.*) Occasionally met with between Edmonton and Little Slave Lake. Our specimens are from this region. (*Macoun.*)

Var. γ. **congestus,** Engelm., Mon. Junc., 450.

Common in numerous meadows, at Oak Bay and Cedar Hill, near Victoria, Vancouver Island, 1887. (*Macoun.*)

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(2373.) **J. Gerardi,** Lois. Notic. 60, (1810.) **(BLACK GRASS.)**

In salt marshes along the Atlantic coast. Windsor, N.S. (*Howe.*) Salt marshes at Truro and Annapolis, N.S. (*Macoun & Burgess.*) Magdalen Islands and Pictou, N.S. (*McKay.*) Salt marshes at Kouchibouguasis, and St. John, N.B. (*Fowler, Cat.*) Beaumont Lake, Q. (*St. Cyr.*) Salt marsh at the head of James Bay, Victoria, Vancouver Island, 1887. (*Macoun.*)

(2374.) **J. bufonius,** Linn.; Hook., Fl. II., 190; Pursh, Fl. I., 238.

Abundant in suitable localities from the Atlantic to the Pacific. Brigus and Petty Harbor, Newfoundland. (*R. Bell.*) Boggy places at Annapolis and Yarmouth, N.S. (*Macoun.*) Very common throughout New Brunswick. (*Fowler, Cat.*) Abundant at Salt Lake and Jupiter River, Anticosti. (*Macoun.*) Thunder River, Q. (*St. Cyr.*) Hamilton's Farm, Argenteuil Co., Q. (*D'Urban.*) Low wet places, quite common at Ottawa. (*Fletcher, Fl. Ott.*) Common at Prescott, Ont. (*Billings.*) Very abundant in overflowed spots by brooks and rivers in central Ontario, and around Lake Superior. (*Macoun.*) Vicinity of Hamilton, Ont. (*Buchan.*) On roadsides at Port Stanley, Lake Erie, and at Port Arthur, on Lake Superior. (*Burgess.*) Abundant on mud by rivers throughout the prairie region and on the Cypress Hills; also abundant in muddy places on Vancouver Island, at Victoria, Nanaimo, Qualicum and Alberni. (*Macoun.*) Sitka, Alaska. (*Meehan.*) Throughout Canada to Bear Lake; North West coast, abundant. (*Hooker, Fl.*) Greenland. (*Lange*).

Var. **fasciculiflorus,** Boiss.; Engelm. Mon. Junc., 451.

Apparently rare or overlooked. Muddy places at Belleville, Ont., 1870; in abundance on King's Farm, Cedar Hill, near Victoria, Vancouver Island, 1887. Easily distinguished from the species by the flowers gathered in fascicles instead of being single on the branches as in the species.

(2375.) **J. falcatus,** E. Meyer. Synops. Luzul. 34.

J. Menziesii, R. Br.; Hook., Fl. II., 192.

Very abundant on the grassy margins of lakes; amongst gravel in many parts of Vancouver Island. Shawnigan Lake; various places at Nanaimo, Qualicum and Alberni; also at Horne and Cameron lakes. (*Macoun.*) Nimpkish Lake, north end of Vancouver Island. (*Dawson.*) Ounalashka, and Sitka. (*Rothr. Alask.*) North West coast. (*Hooker, Fl.*)

(2376.) **J. longistylis,** Torrey, Bot. Mex. Bound., 323.

J. Menziesii, Gray, Pl., Hall & Harb., 77.

Abundant on many parts of the prairie region. Rather com-

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mon at Windsor on the Detroit River, 1885. (*Macoun.*) First Branch of Milk River, 49th parallel. (*Dawson.*) Maple Creek, Alberta. (*J. M. Macoun.*) Frequent in damp grassy thickets from Winnipeg to Edmonton and south to the Cypress Hills and Calgary, from thence up the Bow River to Laggan, in the centre of the Rocky Mountains. (*Macoun.*)

(2377.) **J. marginatus,** Rostk. var. **paucicapitatus,** Engelm., Mon. Junc., 455.

The only locality for this species known to us is Elliott's Falls, Gull River, Victoria Co., Ont., 1868. (*Macoun.*) Engelmann in "Normal Herbarium" credits his No. 34 to Canada West, on the authority of Bigelow.

(2378.) **J. pelocarpus,** E. Meyer. Synops. Luzul. 30.

J. Conradi, Gray, Man. Ed. II., 482.

J. acutiflorus, Hook., Fl. II., 190.

In wet sand along rivers or lakes, apparently rare. From Newfoundland westward to Lake Superior. (*Engelmann.*) Bocabec, and Quaco, N.B. (*Fowler, Cat.*) On the bank of the Ottawa, above Britannia, near Ottawa. (*Fletcher, Fl. Ott.*) On the shores of lakes and small streams in North Hastings and Addington Co's., Ont. (*Macoun.*) Wet gravelly shore, Lake Joseph, Muskoka Co, Ont. (*Burgess.*)

Var. γ (?) **subtilis,** Engelm., Mon. Junc., 456.

J. fluitans, Michx., Fl. I., 191.

J. uliginosus, β. subtilis, Hook., Fl. II., 191.

Chicoutimi, about 100 miles north of Quebec. (*Michaux.*) The above locality was given to Dr. Engelman by Prof. Ovide Brunet, of Laval University, Quebec. Both are now dead.

(2379.) **J. articulatus,** Linn.; Engelm., Mon. Junc., 458.

Engelmann states that this species, as far as he is aware, is confined to the New England States, and that the next species takes its place to the northward and westward. Wet ditch at Windsor, N.S., and at North Sydney, Cape Breton. (*Macoun & Burgess.*) Hampton, Petitcodiac, Baie Verte, and Clifton, N.B. (*Fowler, Cat.*) Fox River, Gaspé coast. (*Macoun.*)

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(2380.) **J. alpinus,** Villars., var. **insignis,** Fries.

J. Richardsonianus Rœm. & Schult.; Hook. Fl. II., 191.
J. acutiflorus, Hook., Fl. II., 190.
J. pelocarpus, Gray, Man. Ed. I., 507, in part.
J. articulatus, var. *pelocarpus,* Gray, Man. Ed. II., 482, in part.
J. uliginosus, var. *minor,* Hook., Fl. II., 191.

Very abundant by lake and river margins, in sand or gravel. Very often in the water, and sometimes floating or reclining or rooting in the mud. On sand, Liscomb River, Guysboro Co., N.S. (*Faribault.*) Magdalen Islands, N.S. (*J. Richardson.*) Truro, N.S.; South West Point, Salt Lake, and Jupiter River, Anticosti; River Ste. Anne des Monts, Gaspé, Q. (*Macoun*) Island of Orleans. (*St. Cyr.*) Abundant on sandy banks of the River Rouge, Argenteuil Co., Q. (*D'Urban.*) Muddy or gravelly places along the Ottawa. (*Fletcher, Fl. Ott.*) Ditches and boggy places, at Prescott, Ont. (*Billings.*) Common in wet sandy places along the Great Lakes and throughout central Ontario. (*Macoun.*) Wet gravelly shore, Parry Sound, Georgian Bay; at Southampton, Ont.; Point aux Pins, Lake Erie. (*Burgess.*) Vicinity of Hamilton, Ont. (*Buchan.*) Very abundant along all the water courses and fresh water lakes in the prairie region, and extending north to the Peace River and Athabasca; specimens from Thunder Creek, Cypress Hills, Bow River at Calgary; Kananaskis, Castle Mountain and Kicking Horse Lake, in the Rocky Mountains; abundant on the borders of Horne, Cameron and Shawnigan lakes, Vancouver Island. (*Macoun.*) Wooded country to the Mackenzie River; Arctic sea-coast, and from Slave Lake to the Rocky Mountains. (*Hooker, Fl.*) Two remarkable forms of this species have been gathered on Vancouver Island. A form floating on mud in a small lake at the Wellington Mine, Departure Bay, exactly matches specimens received from the British Museum without a name, gathered by Barclay at Port Etches, Alaska. The other is a tall, less compact form than the species, with longer scales, and in most cases two or more viviparous flowers in the heads. The latter was collected at Horne Lake, July 27, 1887.

(2381.) **J. militaris,** Bigelow, Fl. Bost. Ed. II. 139, (1824.)

Apparently very rare in the Maritime Provinces. Wet places, Caledonia, Guysboro Co., N.S. (*Faribault.*) Near St. Stephen, N.B. (*Vroom.*)

(2382.) **J. acuminatus,** Michx., var. *α.* **legitimus,** Engelm., Mon. Junc., 463.

J. acuminatus, Michx., Fl. I., 192.
J. paradoxus, E. Meyer.; Gray, Man. Ed. II., 481.
J. fraternus, Kunth. Enum. III., 332.

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We have no authentic specimens of this species except from the shores of Lake Erie, at Pelee Point, and from Essex Centre, on the Canada Southern Railway, 1882. (*Macoun.*)

(2383.) **J. nodosus,** var. *α.* **genuinus,** Engelm., Mon. Junc., 471.

J. nodosus, Linn; Gray, Man. Ed. II., 482; Macoun, Cat. No. 1898.
J. polycephalus, var. *β. tenuifolius,* Hook., Fl. II., 190.
J. Rostkovii, La Harpe, Mon. Junc., 133.
J. *echinatus,* Muhl. Rich., App. p. 11.

Quite common in many localities, ranging from the Atlantic to the Pacific. Wet sandy bottom, at Whycocomagh, Cape Breton. (*Macoun.*) Restigouche, Campbellton, Andover, Salmon River, Green River and Upper St. John, N.B. (*Fowler, Cat.*) Salt Lake, Anticosti, and at Fox River, Gaspé coast. (*Macoun.*) St. Charles River, Q. (*St. Cyr.*) Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Common at Prescott, Ont. (*Billings.*) Border of Salmon River, near Shannonville, Hastings Co., Ont.; in small brooks, Victoria Co., and at Owen Sound, Ont. (*Macoun.*) Vicinity of Hamilton, Ont. (*Buchan.*) Wet river flat, London, and at Southampton, Ont. (*Burgess.*) La Cloche Island, Georgian Bay. (*R. Bell.*) North shore of Lake Superior. (*Agassiz.*) Shores of Thunder Bay, Lake Superior, and on the shore of Lake Nipigon, at Humboldt Bay. (*Macoun.*) Elk Island, Lake Winnipeg. (*J. M. Macoun.*) Rather common in the bed of the Saskatchewan and its branches; not detected in the Rocky Mountains, and only sparingly at Donald, in the Columbia Valley. (*Macoun.*) Along the Thompson River, at Spence's Bridge, B.C. (*Fletcher.*) Canada to Bear Lake. (*Hooker, Fl.*)

The tall form mentioned by Dr. Gray (Manual 542) as occurring on the islands above Niagara Falls, has been gathered at Point aux Pins, Lake Erie, by Dr. Burgess.

Var. **megacephalus,** Torr., Bot. N. York II., 326.

J. megacephalus, Wood, Bot., 724.

Low rich soil or lake margins. Toronto Island, Lake Ontario. (*Burgess. Macoun.*) Burlington Marsh, near Hamilton, Ont. (*Buchan.*) Abundant in many places in low wet situations throughout Manitoba, extending west to the File Hills and Elbow of the South Saskatchewan. (*Macoun.*) Point aux Pins, Lake Erie. (*Burgess.*)

(2384.) **J. Canadensis,** J. Gay, var. *α,* **coarctatus,** Engelm., Mon. Junc., 473.

J. Canadensis, β, J. Gay, La Harpe Mon., 134.
J. accuminatus, Torr. Bot., N. York, II., 327.
J. acutiflorus, β, minor, Hook., Fl. II., 190. (?)

Low grounds, especially along lake margins; not uncommon. Bed-

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ford and Pictou, N.S. (*Sommers, Cat.*) River bottom, Whycocomagh, and North Sydney, Cape Breton; border of a lakelet, Canso, N.S. (*Macoun.*) Rather common in Kent Co.; Bocabec and Chipman, N.B. (*Fowler, Cat.*) Campbellton, N.B. (*Chalmers.*) Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Borders of various lakes in Hastings, Addington, and Victoria Co's., Ont. (*Macoun.*) Low sandy places, Port Cockburn, Muskoka Co.; also in ditches at Leamington, Ont. (*Burgess.*) Point Edward, Lake St. Clair, Ont.; Lake Mistassini, N.E.T. (*J. M. Macoun.*) Vicinity of Hamilton, Ont. (*Buchan.*)

Var. δ. **longecaudatus,** Engelm., Mon. Junc., 474.

J. paradoxus, Gray, Man. Ed. II, 483.

J. polycephalus, β, paradoxus, Torr. Bot., N. York, II., 327.

Easily separated from the preceding variety, as it is much taller and has many flowered heads. Common in Kent Co., N.B. (*Fowler, Cat.*) Gull River, Victoria Co., Ont., and Point Edward, Lake Huron. (*Macoun.*) Mossy bog, London, Ont. (*Burgess. Millman.*) Sault Ste. Marie. (*Burgess.*)

(2385.) **J. Mertensianus,** Bong. Veg. Sitcha, (1833.)

J. ensifolius, var. *minor,* Hook., Fl. II., 191, in part.

Wet places along mountain brooks. Camp Akamina, Rocky Mountains, 6,000 feet alt, South Kootanie Pass, 49th parallel. (*Dawson.*) On the summit of Copper and Castle mountains, Rocky Mountains. (*Macoun.*) Alpine swamps of the Rocky Mountains, north of the Smoky River; Sitka to Ounalashka. (*Hooker, Fl.*)

Var. β, **paniculatus,** Engelm., Mon. Junc., 479.

Collected in the Rocky Mountains along the Bow River, by Bourgeau. (*Engelmann.*)

(2386.) **J. xiphoides,** E. Meyer, Var. γ. **montanus,** Engelm., Mon. Junc., 481.

J. ensifolius, var. *major,* Hook., Fl. II., 191.

Not uncommon in the Rocky Mountains. South Fork of Belly River, 49th parallel; Flathead River, B.C. (*Dawson.*) In brooks in the Cypress Hills, and westward along the Bow River throughout the Rocky Mountains, and northward along the North Saskatchewan, at Fort Pitt and Edmonton; also along Beaver Creek, in the Selkirk Mountains. (*Macoun.*)

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Var. *α.* **littoralis,** Engelm., Mon. Junc., 481.

Abundant along the Somas River, at Alberni, and in marshes covered by high tide at the mouth of that river, on the west coast of Vancouver Island, 1887. (*Macoun.*)

Var. *δ.* **macranthus,** Engelm., Mon. Junc., 482.

J. polycephalus, var. *crassifolius,* Hook., Fl. II., 190, in part.

Ounalashka, North West coast, and Cascade Mountains. (*Engelmann.*) Common in ditches and by the margins of brooks, rivers and lakes, near Victoria, Nanaimo, Qualicum and Alberni, Vancouver Island. (*Macoun.*) Nimpkish Lake, Vancouver Island. (*Dawson.*) Fort Wrangel, Alaska. (*Meehan.*) North West coast; frequent. (*Hooker, Fl.*)

Var. *ε.* **triandrus,** Engelm. Mon. Junc., 482.

J. ensifolius, var. *minor,* Hook., Fl. II., 190, in part.

From Ounalashka to the Cascade Mountains. (*Engelmann.*) Abundant on the margins of lakes and by streams, on Vancouver Island, Langford Lake, Horne Lake, and Barclay Sound. (*Macoun.*) Sitka to Ounalashka. (*Hooker, Fl.*)

(2387.) **J. Nevadensis,** Watson, Proced. Am. Acad. XIV., 303.

J. phæocephalus, var. *gracilis,* Engelm., Mon. Junc., 484.

Ladner's Landing, and New Westminister, along the Fraser River, B.C., 1883. (*Fletcher.*) Abundant in marshes at the head of Barclay Sound, and along Chinaman Creek and Somas River that flow into it, on the west coast of Vancouver Island. (*Macoun.*)

(2388.) **J. supiniformis,** Engelm., Mon. Junc., 461.

Stems generally floating in water and often rooting at the nodes. Where the water recedes the plants grow upright and the heads are larger. Small ponds at the mouth of the Somas River, and along Sproat Lake, six miles from Alberni, west side of Vancouver Island, 1887. (*Macoun.*)

638. LUZULA, DC. (WOOD-RUSH.)

(2389.) **L. spadicea,** DC., var. **parviflora,** Meyer, Linnæa, XXII., 399.

L. melanocarpa, var. *β,* Hook., Fl. II., 188.
L. spadicea, Macoun, Cat. No. 1879.

This form is abundant in favourable places from the Atlantic to the

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Pacific, but is always found in cool situations. Cumberland Islands, Arctic coast. (*Parry.*) Newfoundland. (*Cormack.*) Nain, coast of Labrador. (*R. Bell.*) Upper Gaspereau, Queen's Co., N.B. (*Wetmore.*) Salt Lake, Anticosti. (*Macoun.*) Mount Albert, Gaspé, Q. (*Macoun. Porter.*) Thunder River, Q. (*St. Cyr.*) Lake Mistassini, N.E.T. (*J. M. Macoun.*) Common along the north shore of Lake Superior and westward to Rainy Lake, and the Lake of the Woods; abundant in the Rocky Mountains, from Canmore west to Hector; common along small streams in the mountainous parts of Vancouver Island. (*Macoun.*) Goose Creek Mountains, 5,800 feet alt., Cariboo, B.C. (*Bowman.*) Port Etches, Alaska. (*Barclay.*) Sitka, Ounalashka, and Kotzebue Sound. (*Rothr. Alask.*) Fort Wrangel, Alaska. (*Meehan.*) North West America, from the Columbia to Kotzebue Sound. (*Hooker, Fl.*) Greenland. (*Lange.*)

Var. **melanocarpa,** E. Meyer.

L. parviflora, var. *melanocarpa*, Gray, Man. Ed. V., 536.
Juncus melanocarpus, Michx., Fl. I., 190; Pursh, Fl. I., 238.

This form is easily distinguished from the preceding by its dark brown capsules, and the more contracted habit of the inflorescence. Labrador. (*Dr. Morrison.*) St. John, N.B. (*Millman.*) Shore of Lake Superior, at the Pic, and along Current River, Thunder Bay. (*Macoun.*) Oba Lake, Ont.; Hayes River, and west coast of Hudson Bay. (*R. Bell.*) On the higher Rocky Mountains, in the Bow River Pass, and northward to the Peace River Pass, lat. 56°, and west to Fort McLeod, lat. 55°, B.C. (*Macoun.*) Camp Akamina, 49th parallel, South Kootanie Pass, and western summit of the North Kootanie Pass, Rocky Mountains; Klootch-oot-a Lake, B.C.; Lake Lindeman, lat. 60°, and hills north of Finlayson Lake, lat. 61° 40″. (*Dawson.*) Kotzebue Sound. (*Beechy.*) Throughout the wooded country to the prairies of the Rocky Mountains. (*Hooker, Fl.*) Greenland. (*Lange.*)

Var. **subcongesta,** Watson, Bot. Calif. II., 202.

Not uncommon in the mountains near lat. 49°. Western summit of North Kootanie Pass, and in the South Kootanie Pass, Rocky Mountains. (*Dawson.*) A form between this and var. *parviflora* has been gathered at Golden City, in the Columbia Valley. The capsules and sepals are very light colored, and approach the west coast form of the above variety. (*Macoun.*)

(2390.) **L. divaricata,** Watson, Proced. Am. Acad. XIV., 302.

Abundant in deep shade along the mountain brooks at Goldstream, Vancouver Island, and probably common, though overlooked. (*Macoun.*)

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Vicinity of Vancouver city, B.C. (*Prof. Fowler.*) This species seems to have very light-colored capsules and sepals, and has a very different cyme from var. *parviflora*, which is well described by the name.

(2391.) **L. pilosa,** Willd.; Hook., Fl. II., 188.

Not uncommon in rich, and sandy woods throughout Ontario, but more sparingly distributed eastward. Newfoundland. (*Reeks.*) Truro, and Windsor, N.S. (*Macoun.*) Common in old fields, N.B. (*Fowler, Cat.*) Gomin-woods, near Quebec. (*St. Cyr.*) Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Thicket a mile west of Prescott, Ont. (*Billings.*) Vicinity of Hamilton, Ont. (*Buchan.*) Thickets at Kingston and London, Ont. (*Millman.*) Sandy woodland near London, Ont. (*Burgess.*) Open woods at Sudbury Junction, and at North Bay, Lake Nipissing; not uncommon in woods at Belleville and numerous places in the adjoining counties; woods at Nipigon, Lake Superior, and on top of a clay bank twenty-five miles up the Kaministiqua River, (*Macoun.*) Canada to the Saskatchewan. (*Hooker, Fl.*)

(2392.) **L. campestris,** Desv., var. α. **vulgaris,** Hook., Fl. II., 188.

Juncus campestris, Willd.; Pursh, Fl. I., 238.

Rather common in dry meadows, or open woods. Newfoundland. (*Cormack.*) New Harbor, Newfoundland. (*Rev. A. Waghorne.*) Halifax, N.S. (*Sommers.*) Magdalen Islands, N.S. (*J. Richardson.*) Truro, Yarmouth, and Kingston, N.S. (*Macoun.*) Dry fields; common, N.B. (*Fowler, Cat.*) Island of Orleans, Q. (*St. Cyr.*) South side of Gaspé Basin, Q. (*J. Bell.*) Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Thicket a mile west of Prescott, Ont. (*Billings.*) Dry woods and meadows at Belleville, and Shannonville, Hastings Co., Ont. (*Macoun.*) Sandy woodland, London, Ont. (*Burgess.*) Thickets at Kingston ,and London, Ont. (*Millman.*) This variety has dense brown heads and is quite distinct in color from the next, which has pale heads of fruit and flowers.

Var. β. **pallescens,** Hook., Fl. II., 188.

Quite common in meadows at Belleville, Ont. (*Macoun.*) Lake Winnipeg to the Saskatchewan, and from the Lake of the Woods to the Rocky Mountains. (*Hooker, Fl.*) Greenland. (*Lange.*)

Var. γ. **comosa,** Hook., Fl. II., 188.

Flowers in a dense solitary brown head. Bear Lake. (*Hooker, Fl.*)

The forms of this and the following species require careful examination and comparison with European species, and indeed the whole genus is much in need of a complete revision.

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(2393.) **L. comosa,** E. Meyer. Linnæa. XXII., 413.

Like the preceding species this is subject to many varieties, and being seldom collected its range can scarcely be made out. Not uncommon in old fields and by roadsides at Victoria, and near the summit of Mount Arrowsmith, alt. 5,200 feet, Vancouver Island. (*Macoun.*) Nootka Sound, and Port Mulgrave; from the Rocky Mountains to the Pacific Ocean. (*Hooker, Fl.*)

Var. **macrantha,** Watson, Bot. Calif. II., 203.

As we understand this variety, its sepals are long with a dark brown centre, the end and sides being scarious and white. Abundant at Victoria, Cedar Hill, Nanaimo, and Chase River, Vancouver Island. (*Macoun.*) Coast of Vancouver Island. (*Cowley.*)

Var. **subsessilis,** Watson, Bot. Calif. II., 203.

Much like the preceding, but the heads few or solitary, and almost sessile, approaching the next but easily distinguished by the scarious, brownish bracts. Abundant under oaks at Cedar Hill, Vancouver Island. (*Macoun.*)

Var. **congesta,** Watson, Bot. Calif. II., 203.

L. campestris, var. *congesta,* Meyer. (as regards America.)

Very abundant everywhere along the coast of Vancouver Island, but particularly at Nanaimo; Fort McLeod, B.C., lat. 55°. (*Macoun.*) Around Vancouver city, B.C. (*Prof. Fowler.*)

(2394.) **L. spicata,** Desv.; Hook., Fl. II., 188.

High mountains and far northward. Ungava Bay, Labrador. (*Barnston.*) Ford's Harbor, coast of Labrador; Stupart's Bay, Cape Prince of Wales, and Nottingham Island, off Cape Wolstenholme, Hudson Strait. (*R. Bell.*) Fort George, James Bay. (*J. M. Macoun.*) Kotzebue Sound. (*Beechy.*) Labrador, and Rocky Mountains. (*Hooker, Fl.*) On the summits of the higher Rocky Mountains, at Castle Mt., and Kicking Horse Lake, Bow River valley. (*Macoun.*) Island of St. Lawrence, and Kotzebue Sound. (*Rothr. Alask.*) Greenland. (*Hooker, Arct. Pl.*) A large form found growing in abundance on Mount Arrrowsmith, Vancouver Island, at an altitude of 5,200 feet, is referred to this species by Dr. Britton, of Columbia College. Many specimens are almost a foot high, and have a spike from an inch to an inch and a half long. The lowest spikelet is rather remote, and usually has a bract longer than the whole spike. Scales very long and ciliate. (*Macoun.*)

(2395.) **L. hyperborea,** R. Br., var. *α.* **major,** Hook., Fl. II., 188.

Apparently confined to the northern coasts and islands. Cumberland

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Islands, Arctic coast. (*Parry.*) Nottingham Island, off Cape Wolstenholme, Hudson Strait. (*R. Bell.*) Between Fort Churchill and Repulse Bay, and thence to Cape Lady Pelly. (*Dr. Rae.*) Point Barrow, Arctic sea. (*John Murdoch.*) Arctic sea-coasts and islands. (*Hooker, Fl.*)

Var. β. **minor,** Hook., Fl. II., 189.

Most elevated of the Rocky Mountains. (*Hooker, Fl.*) Lange, in the Botany of Greenland, refers this variety to *L. arctica, Blytt.* The whole genus seems in great confusion and needs complete revision.

(2396.) **L. arcuata,** Hook., Fl. II., 189.

On high mountains and northward. Cumberland Islands, Arctic coast. (*Parry.*) Ungava Bay, Labrador. (*Barnston.*) Nachvak, coast of Labrador; Cape Chudleigh, and Nottingham Island, off Cape Wolstenholme, Hudson Strait. (*R. Bell.*) Kotzebue Sound. (*Beechy.*) Lancaster Sound, and Port Kennedy. (*Dr. Walker.*) Greenland. (*Lange.*)

CXI. TYPHACEÆ. Cat-tail Family.

639. TYPHA, Linn. Gen. 1040. (CAT-TAIL FLAG.)

(2397.) **T. latifolia,** Linn.; Hook., Fl. II., 170.

Common in marshes and ponds from the Atlantic to the Pacific. We are not aware of any difference of form between the specimens collected in the Atlantic provinces and those collected on Vancouver Island. Throughout Canada to Fort Franklin. (*Hooker, Fl.*)

(2298.) **T. angustifolia,** Linn.; Gray, Man. Ed. V., 480.

Apparently rare in Canada, but possibly overlooked. Beaver Bank, Halifax Co., N.S. (*Sommers, Cat.*) Windsor, N.S. (*McGill Coll. Herb.*) Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Marsh near the railway, two miles south of Madoc, Hastings Co., Ont. (*Ami.*) Referred to Newfoundland by Reeks, but of doubtful occurence.

640. SPARGANIUM, Linn. Gen. 1041. (BUR-REED.)

(2399.) **S. eurycarpum,** Engelm.; Gray, Man. Ed. V., 481.

S. ramosum, Huds.; Hook., Fl. II., 169, in part.

Not uncommon but seldom collected. Chiefly along the margins of

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ponds and lakes. Newfoundland. (*Reeks.*) Halifax, Pictou, and Oyster Ponds, Guysboro Co., N.S. (*Sommers, Cat.*) Kentville, and Cape Blomidon, N.S. (*Macoun.*) Pictou Co., N.S. (*McKay.*) Common at St. Louis Dam and other places near Ottawa. (*Fletcher, Fl. Ott.*) Abundant in marshes near Prescott Junction, Ont. (*Billings.*) Common in the Bay of Quinte and in the still waters of the Trent River, Northumberland Co., Ont. (*Macoun.*) Marshes, Burlington Bay, Hamilton, Ont. (*Logie.*) London, Ont., and in the Lake of the Woods. (*Burgess.*) Kemptville, Ont. (*Porter.*) Missinaibi River, Ont. (*R. Bell.*) In water at London, and Newboro, Ont. (*Millman.*) Ponds, Cypress Hills, Alberta. (*Macoun.*)

(2400.) **S. androcladum,** Morong. (MS.)

S. ramosum, Smith,; Pursh, Fl. II., 33; Hook., Fl. II., 169, in part.
S. simplex, var. *androcladum,* Engelm. Gray, Man. Ed. V., 481; Macoun Cat. No. 1722, var. *androcladum.*

References made to *S. eurycarpum,* no doubt, in some cases belong here, but except as regards our own specimens we have no means of determining. Indian Cove, Pictou Co., N.S. (*McKay.*) Norton, N.B. (*Fowler, Cat.*) Lachine Wood, near Montreal, 1821. (*Dr. Holmes.*) Common in the Nation River at Casselman, near Ottawa; in the Bay of Quinte, and not infrequent on the margins of ponds and lakelets in central Ontario. (*Macoun.*) At London, Ont.; and in Lake Joseph, Muskoka, Ont. (*Burgess.*) Not uncommon in marshes near Cedar Hill, and at Nanaimo, Vancouver Island. (*Macoun.*) Cumberland House, on the Saskatchewan. (*Hooker, Fl.*)

Var. **fluctuans,** Morong. (MS.)

S. simplex, var. *fluitans,* Engelm.; Gray, Man. Ed. V., 481

The branched infloresence includes this form with *S. androcladum.* Marshes, Campbellton, N.B. (*Chalmers.*) Severn River, Keewatin. (*J. M. Macoun.*)

(2401.) **S. simplex,** Huds.; Pursh, Fl. I., 34; Hook., Fl. II., 169.

S. simplex, Huds., var. *Nuttallii,* Engelm.; Gray, Man. Ed. V., 481.

Under one form or another this species extends from the Atlantic to the Pacific. Newfoundland. (*Miss Brenton.*) Labrador. (*Butler.*) Windsor, N.S. (*Sommers, Cat.*) Pictou Co., and Magdalen Islands, N.S. (*McKay.*) Smith's Mills, near Truro, N.S. (*Campbell.*) Marshy brook at Windsor, N.S.; Black Creek, near Louisburg, Cape Breton. (*Macoun.*) Caledonia, Guysboro Co., N.S. (*Faribault.*) Salt Lake, Anticosti, and in Fox River, Gaspé, Q. (*Macoun.*) Ouatchechow, Q. (*St. Cyr.*) In wet places and borders of lakes, Bass River, and Welsford; St.

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John Co., N.B. (*Fowler, Cat.*) Meadows near Gregory's, Montreal, 1821. (*Dr. Holmes.*) Durham, Q. (*McGill Coll. Herb.*) Vicinity of Ottawa; common. (*Fletcher, Fl. Ott.*) Muddy Creek, near Huckleberry Rapids, Argenteuil Co., Q. (*D'Urban.*) Conway's Creek and other places; common at Prescott, Ont. (*Billings.*) Mud, in the bed of small streams and along lakes and ponds in central Ontario. (*Macoun*) In water, London, and Hatchley, Ont. (*Burgess.*) Abundant in the mouths of the Kaministiqua River, and in marshes, Nipigon Bay, Lake Superior. (*Macoun.*) Oba Lake, Ont.; and Nelson River, Keewatin. (*R. Bell.*) Thunder Creek, at the Elbow of South Saskatchewan, Assiniboia; abundant in marhsy places, along lakes and ponds throughout Vancouver Island, from Victoria to Qualicum, on the east coast; and in the Somas and Stamp rivers at Alberni, on the west side of the island. (*Macoun.*) Ilgacho Brook, B.C. (*Dawson.*) Throughout Canada to Fort Franklin; abundant. (*Hooker, Fl.*)

(2402.) **S. affine,** Schnitzlein.

S. natans, Linn.; Pursh, Fl. II., 34; Hook., Fl. II., 169.

S. simplex, Huds., var. *angustifolium,* Gray, Man. Ed. V., 481.

This species is doubtless overlooked in many sections of the country, as it does not seem to be rare; when looked for it can easily be distinguished by its narrow floating leaves. Newfoundland. (*Reeks.*) North Sydney, Cape Breton, (*Macoun.*) Halifax, N.S. (*Sommers, Cat.*) Pictou, Co., N.S. (*McCulloch.*) Caledonia, Guysboro Co., N.S. (*Faribault.*) Salmon River; Kennebeccasis and Bass rivers, N.B. (*Fowler, Cat.*) In marshes, Salt Lake, Anticosti; mouth of the Restigouche River, and Grand Vallée, Gaspe, Q.; muddy border of Partridge Lake, Addington Co., Ont.; abundant in the still waters of the Trent, Seymour, Northumberland Co., Ont., and in the middle channel at the mouth of the Kaministiqua, Lake Superior. (*Macoun.*) North shore of Lake Superior. (*Agassiz.*) Lake Joseph, Muskoka Co., Ont. (*Burgess.*) Lake Mistassini, N.E.T. (*J. M. Macoun.*) Lake of the Woods. (*Dawson.*) Kotzebue Sound, and Ounalashka. (*Rothr. Alask.*) Alpine lakes of the Rocky Mountains; rare, (*Hooker, Fl.*)

(2403.) **S. hyperboreum,** Laest., var. **Americanum,** Beeby.

Apparently a northern species, and evidently not rare in suitable localities. Labrador. (*Butler.*) In a ditch near Louisburg, Cape Breton Island; in a marsh at Ellis Bay, Anticosti. (*Macoun.*) Fort George, James Bay. (*J. M. Macoun.*) Fort Churchill, Hudson Bay. (*R. Bell.*)

(2404.) **S. minimum,** Fries.; Gray, Man. Ed. V., 432.

This and *S. hyperboreum* have hitherto been confounded in our collec-

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tions, but are now separated. Campbellton, N.B. (*Fowler, Cat.*) Not rare in swamps near Belleville, Hastings Co., and in the mud of small ponds in Seymour, Northumberland Co., Ont.; Red Deer Lake, at the head of Lake Winnipegoosis, and in marshes along the Porcupine Mountain, Man.; not rare in pools, growing on mud, Columbia Valley at Donald, and westward up Beaver Creek, in the Selkirk Mountains. (*Macoun.*)

CXII. AROIDEÆ. Arum Family.

641. ARISÆMA, Martius, (INDIAN TURNIP.)

(2405.) **A. triphyllum,** Torr., Bot. N. York, II., 239.

Arum triphyllum, Linn.; Hook., Fl. II., 168; Pursh, Fl. II., 399.
A. atrorubens, Ait. Kew. III., 315.

Rich low woods, rather common. Hantsport, Pictou, Middletown, and Truro, N.S. (*Sommers, Cat.*) Truro, and Annapolis, N.S. (*Macoun.*) Common; Bass River, Woodstock; St. John and King's Co's., N.B. (*Fowler, Cat.*) Campbellton, N.B. (*Chalmers.*) Bathurst, N.B. (*McGill Coll. Herb.*) Papineau Wood, near Montreal, 1821. (*Dr. Holmes.*) Montreal Mountains. (*McGill Coll. Herb.*) Common in low rich woods, Argenteuil Co., Q. (*D'Urban.*). McKay's woods, Dow's swamp, and other localities near Ottawa. (*Fletcher, Fl. Ott.*) Very common in woods at Prescott, Ont. (*Billings.*) Very common in all low rich woods throughout central Ontario. (*Macoun.*) Common around Hamilton, Ont. (*Logie.*) Vicinity of London, Ont.; low rich woods Emerson, Man. (*Burgess.*) Opposite Grand Island, Lake Superior. (*R. Bell.*)

(2406.) **A. Dracontium,** Schott. Melet. I., 17.

Arum Dracontium, Willd.; Pursh, Fl. II., 400; Michx., Fl. II., 188.

Apparently confined to a small area in south-western Ontario. Low rich river flats, London, Ont. (*Burgess.*)

642 PELTANDRA, Rafin. (ARROW ARUM.)

(2407.) **P. Virginica,** Raf. Journ. de Phys., 89, page 103.

Arum Virginicum, Linn.; Pursh, Fl. II., 399.
Calla Virginica, Michx., Fl. II., 187.

Apparently rare in Ontario. Very abundant in a marsh about a mile beyond "the Ferry," Prince Edward Co., near Belleville, Ont. (*Macoun.*)

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643. CALLA, Linn. (WATER ARUM)

(2408.) **C. palustris,** Linn.; Hook., Fl. II., 169; Pursh, Fl. II., 399.

Rather common in marshes and spring brooks. Windsor, and Pictou, N.S. (*Sommers, Cat.*) Straits of Canso, Guysboro Co., N.S. (*Macoun.*) In cold muddy places; Grand Falls, St. Francis River, and Quispamsis, Andover, Chipman, Clifton, Fredericton, and Bathurst road, north of Miramichi, N.B. (*Fowler, Cat.*) Common at Rivière du Loup, Q. (*Thomas.*) Dow's swamp and other localities near Ottawa. (*Fletcher, Fl. Ott.*) Very common at Prescott, Ont. (*Billings.*) Marshes and ponds, rather common in central Ontario. (*Macoun.*) Lake Medad, near Hamilton, Ont. (*Logie.*) In shallow water at London, Ont.; Lake Island, Lake Joseph, Muskoka Co., Ont., and Lake of the Woods. (*Burgess.*) London and Newboro, Ont. (*Millman.*) Opposite Gros Cap, Lake Superior. (*R. Bell.*) Current River, Lake Superior, and in Lake Hannah, Nipigon River; also in marshes at the base of the Porcupine Mountain, Man. (*Macoun.*) Winnipeg, and North-west Angle Road. (*Dawson.*) Rupert River, N.E.T.; Lake Winnipeg and up Beren's River and down the Severn River, Keewatin. (*J. M. Macoun.*) Oba Lake, Ont. (*R. Bell.*) Canada to the Saskatchewan and Hudson Bay. (*Hooker, Fl.*)

644. LYSICHITUM, Schott. (WESTERN SKUNK CABBAGE)

(2409.) **L. Kamtschatcense,** Schott., Prodr. Aroid., 421.

Arctiodracon Camtschaticum, Gray, Smithson. Contrib. (N Series) IX. 409.
Symplocarpus Kamtschaticus, Bong.; Hook., Fl. II., 169.

Very abundant in Beaver Creek valley, from the Columbia to Bear Creek in the Selkirk Mountains; also abundant at Revelstoke, on the Columbia, and in the low rich woods below Yale, in the Fraser Valley; very common in wet places in many parts of Vancouver Island. (*Macoun.*) Vicinity of Victoria, Vancouver Island. (*Fletcher.*) North West America. Sitka. (*Hooker, Fl.*) Fort Wrangel, Alaska. (*Meehan.*)

645. SYMPLOCARPUS, Salisb. (SKUNK CABBAGE.)

(2410.) **S. fœtidus,** Salisb.; Hook., Fl. II., 169.

Pothos fœtidus, Pursh, Fl. II., 398; Michx., Fl. II., 186.

Rather local but abundant where it grows. Swamps, or along

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the base of hills where springs abound. Abundant near the lighthouse, Cape Forteau, Yarmouth, N.S. (*Macoun & Burgess.*) Lake Utopia, Milkish, King's Co.; Nigadoo River, Gloucester Co.; near the Episcopal Church, Hammond River, N.B. (*Fowler, Cat.*) Common at Quebec. (*Thomas.*) Vicinity of Montreal, 1821. (*Dr. Holmes.*) In a swamp near Perth, Lanark Co., Ont. (*R. B. Whyte.*) In a deep dell two miles north of Warkworth, Northumberland Co., Ont.; abundant around St. Thomas, and Port Stanley, Ont.; very common on Michipicotin Island, Lake Superior. (*Macoun.*) Oaklands, near Hamilton, Ont. (*Logie.*) Low grounds, London, Ont. (*Burgess, Millman.*) Vicinity of Toronto. (*Burgess.*)

646. ACORUS, Linn. (SWEETFLAG)

(2411.) **A. Calamus,** Linn.; Hook., Fl. II., 167; Pursh, Fl. I., 235.

Abundant in marshes by rivers and lakes. Pennant Harbor, Halifax Co., N.S. (*Sommers.*) Abundant in a marsh at Truro and near Yarmouth, N.S. (*Macoun.*) Common on the borders of lakes and ponds, Kouchibouguac, Kennebeccasis, and Hopewell, N.B. (*Fowler, Cat.*) Shallow lake, Fraserville, Q. (*Thomas.*) Sandy banks of the River Rouge, Argenteuil Co., Q. (*D'Urban.*) Abundant in marshes around Ottawa. (*Fletcher, Fl. Ott.*) Margin of St. Lawrence River, and small streams near Prescott, Ont. (*Billings.*) Common in marshes of the Bay of Quinte, and on the shores of Lake Ontario and all still waters inland, north of the lake. (*Macoun.*) Vicinity of Hamilton, (*Buchan.*) Chatham, Ont. (*McGill Coll. Herb.*) Swamps at Kingston, Ont. (*Burgess, Millman.*) Point Pelee marshes, Lake Erie. (*Burgess.*) Sydenham River, Owen Sound, Ont. (*Macoun.*) Oba River, Ont. (*R. Bell.*) Lake of the Woods. (*Dawson, Burgess.*) Canada to the Saskatchewan. (*Hooker, Fl.*)

CXIII. LEMNACEÆ. Duckweed Family.

647. LEMNA, Linn. (DUCKWEED)

(2412.) **L. trisulca,** Linn.; Hook., Fl. II., 169; Pursh, Fl. I., 22.

Abundant in many ponds from the Atlantic to the Pacific. Ponds Windsor, N.S. (*Macoun.*) Petitcodiac, N.B. (*Fowler, Cat.*) Abundant around Ottawa. (*Fletcher, Fl. Ott.*) Conway's Creek and other places near Prescott Ont.; common. (*Billings.*) Very abundant in

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all still waters throughout central Ontario. (*Macoun.*) Common in marshes at Hamilton, Ont. (*Buchan.*) Marshes at Kingston, Ont. (*Millman.*) Small lakes, Red River prairie and Lake of the Woods, 49th parallel. (*Dawson.*) Ponds, Souris Plains, Assiniboia. (*J. M. Macoun.*) In ponds throughout the prairie region, on the Cypress Hills and north to Peace River and Little Slave Lake; common in ponds and quiet rivers at Cedar Hill, Nanaimo, and Alberni, Vancouver Island. (*Macoun.*) Canada to lat. 58°. (*Hooker, Fl.*)

(2413.) **L. minor,** Linn.; Hook., Fl. II., 169.; Pursh, Fl. I., 22.

Frequent in ponds from the Atlantic to the Pacific. Magdalen Islands, N.S. (*McKay.*) In ponds at Truro, and in ditches at Pictou, N.S. (*Macoun.*) Petitcodiac, N.B. (*Fowler, Cat.*) Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Conway's Creek and other places near Prescott, Ont.; common. (*Billings.*) Very common in ditches and shallow pools throughout central Ontario. (*Macoun.*) Marshes near Hamilton, Ont. (*Buchan.*) Common in the Lake of the Woods and in small ponds on the Red River prairie. (*Dawson.*) Abundant in pools throughout the whole prairie region, extending northward to the Athabasca and Peace rivers, and westward to Quesnel, on the Fraser River, and throughout Vancouver Island. (*Macoun.*) Canada to lat. 58°. (*Hooker, Fl.*)

(2414.) **L. polyrrhiza,** Linn.; Hook., Fl. II., 169; Pursh, Fl. I., 22.

Spirodela polyrrhiza, Schleid.; Coult. Rocky Mount. Flora, 360.

Scarcely so common as the other, but just as widely distributed. In still water near Louisburg, Cape Breton. (*Macoun.*) Sussex, N.B. (*Fowler, Cat.*) Common around Montreal, 1821. (*Dr. Holmes.*) Common in still water around Ottawa. (*Fletcher, Fl. Ott.*) Conway's Creek and other localities near Prescott, Ont. (*Billings.*) In ponds, Gananoque, Ont. (*Prof. Fowler.*) Marshes and ponds everywhere throughout central Ontario, especially in the still waters of the River Trent, and Rice Lake. (*Macoun.*) Marshes at Hamilton, Ont. (*Buchan.*) Pelee Point, Lake Erie. (*Burgess.*) Stagnant pools near London, Ont. (*Burgess, Millman.*) Occasionally in pools and still waters west of Porcupine Mountain, Man., and westward to Little Slave Lake; rather rare on Vancouver Island, but not uncommon at Alberni, on the west coast. (*Macoun.*) Cumberland House, on the Saskatchewan. (*Hooker, Fl.*)

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648. WOLFFIA, Horkel. (WOLFFIA)

(2415.) **W. Columbiana,** Karsten.; Gray, Man. Ed. V., 420.

Abundant in marshes of the Bay of Quinte, near Belleville, Ont. (*Macoun.*) In the marsh at the head of Burlington Bay, Hamilton, Ont. (*Buchan.*)

(2416.) **W. Brasiliensis,** Weddell.; Gray, Man. Ed. V., 480.

Growing with the preceding and *Lemna minor*, in the "Big Marsh" one mile beyond "the Ferry," Prince Edward Co.; near Belleville, on the Bay of Quinte, Ont. (*Macoun.*) In the marsh at the head of Burlington Bay, Hamilton, Ont. (*Buchan.*)

Specimens of this genus are distinguished from any form of *Lemna* by the absence of roots. Hitherto they have been rarely detected, but it is less from their absence than from their small size.

CXIV. ALISMACEÆ. WATER-PLANTAIN FAMILY.

649. ALISMA, Linn. Gen. 460. (WATER-PLANTAIN)

(2417.) **A. Plantago,** Linn., Var. **Americanum,** Gray, Man. Ed. V., 492.

A. Plantago, Linn.; Michx., Fl. I., 218; Hook., Fl. II., 168.

A. natans, Pursh, Fl. I., 253; Hook., Fl. II., 168.

A. trivialis, Pursh, Fl. I., 252.

Rather common in ditches and borders of streams from the Atlantic to the Pacific. It varies greatly in the form of its leaves, but the varieties are not recognized. Windsor, Grand Lake, Halifax, Pictou, and Truro, N.S. (*Sommers, Cat.*) Common in wet places, N. B. (*Fowler, Cat.*) Abundant throughout Quebec and Ontario, and extending westward to British Columbia. On the prairie region its leaves often become linear, and float on the surface of the still brooks south of Battleford.

We have doubtfully referred the *A. natans*, Pursh, to this species, as from the meagre description it *seems* to belong here. It was gathered in "stagnant waters of the St. Lawrence" by Pursh himself.

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650. SAGITTARIA, Linn. Gen. 1067. (ARROW-HEAD)

(2418.) **S. variabilis,** Engelm.; Gray, Man. Ed. Ed. V., 493.

S. sagittifolia, Pursh, Fl. II., 395; Hook., Fl. II., 167.

Under its various forms this species extends across the continent though it is apparently quite rare, if present at all, in British Columbia. It seems to be common in all the eastern provinces, but has not been separated into varieties, and hence no special reference can be made to them. Our specimens show the following varieties:—

Var. **obtusa,** Engelm.; Gray, Man. Ed. V., 493.

S. obtusa, Willd.; Pursh, Fl. II., 396.

Leaves large and obtuse, flowers dicœcious. Abundant in water in the Bay of Quinte, at Belleville, Ont. (*Macoun.*) Oba Lake, Ont. (*R. Bell.*) Vicinity of Ottawa, Ont. (*Ami.*)

Var. **latifolia,** Engelm.; Gray, Man. Ed. V., 493.

S. latifolia, Willd.; Pursh, Fl. II., 396.
S. sagittifolia, var. *macrophylla,* Hook., Fl. II., 167.
S. sagittifolia, Michx.. Fl. II., 189.

Campbellton, N.B. (*Chalmers.*) In lakes and rivers, not uncommon, Hastings Co., Ont. (*Macoun.*) North-west coast, where it is called "Wapatoo," and where the roots are eaten by the Chinooks. (*Hooker, Fl.*)

Var. **hastata,** Engelm.; Gray, Man. Ed. V., 493.

S. sagittifolia, var. 3, *angustifolia,* Hook. Fl. II., 167, in part.
S. hastata, Pursh, Fl. II., 396.

This variety includes all the larger forms with acute and sagittate leaves, and may be called the common variety throughout the country. There are three forms of it well represented in our herbarium.

(*a.*) Has large very elongated leaves, with very acute and divaricate lobes, flowers dicœcious. Nation River, at Casselman, near Ottawa, and in Brigham's Creek, near Hull, Q. (*Macoun.*) London, Ont. (*Burgess.*) River St. Charles, Q. (*St. Cyr.*)

(*b.*) This form is easily distinguished from (*a*), by its much smaller and shorter leaves, abruptly acute or almost obtuse point, and short very acute less divaricate lobes. Muskeg Island, Lake Winnipeg. (*J. M. Macoun.*) In small streams, near the Hand Hills, Alberta. (*Macoun.*) South Antler Creek, Assiniboia. (*Burgess.*)

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(*c.*) This is a shallow water form with small hastate leaves, scarcely divergent, and very short lobes and always monœcious flowers. Grand Vallée, Gaspé, Q.; Bay of Quinte, at Belleville, Ont.; mouth of the Nipigon River, Lake Superior. (*Macoun.*) Missinaibi River, Ont. (*R. Bell.*)

Var. **diversifolia,** Engelm.; Gray, Man. Ed. V., 393.

Some leaves of this form are lanceolate and others are sagittate. Moose Mountain Creek, Man. (*J. M. Macoun.*) Ponds in the Eagle Hills, near Battleford, N.W.T. (*Macoun.*)

Var. **angustifolia,** Engelm.; Gray, Man. Ed. V., 393.

The very long, narrow and divergent lobes of the narrow leaves characterize this form. Marshes near Cape Blomidon, N.S.; Nation River, at Casselman, near Ottawa, and in the Bay of Quinte, at Belleville, Ont. (*Macoun.*) In shallow water at Port Dover, Ont. (*Millman.*) London, and Port Cockburn, Muskoka Co., Ont. (*Burgess.*)

Var. **gracilis,** Engelm.; Gray, Man. Ed. V., 393.

S. sagittifolia, var. *angustifolia,* Hook., Fl. II., 167, in part.
S. gracilis, Pursh, Fl. II., 396.

River St. Pierre, near Montreal, 1821. (*Dr. Holmes.*) River St. Charles, Quebec. (*St. Cyr.*) Ponds in the Eagle Hills, near Battleford, N.W.T. (*Macoun.*)

Var. **pubescens,** Engelm.; Gray, Man. Ed. V., 393.

Leaves pubescent as well as the upper part of the petiole and scape. Bay of Quinte, at Belleville, Ont. (*Macoun.*)

(2419.) **S. calycina,** Engelm. Var. **spongiosa,** Engelm.; Gray, Man. Ed. V., 393.

Near the head of the tide in Richibucto River and at Rothesay; also Tobique River, N.B. (*Fowler, Cat.*)

(2420.) **S. heterophylla,** Pursh, Fl. II., 396.

S. sagittifolia, var. 3, *angustifolia,* Hook., Fl. II., 167, in part.

Apparently rare eastward but not uncommon in waters bordering on the St. Lawrence and Great Lakes. Abundant in numerous places around Ottawa. (*Fletcher, Fl. Ott.*) Not uncommon in the Bay of Quinte, at Belleville, and at Weller's Bay, Lake Ontario. (*Macoun.*)

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Var. **rigida,** Engelm.; Gray, Man. Ed. V., 394.
S. rigida, Pursh, Fl. II., 397; Hook., Fl. II., 397.
Apparently the deep water form of the Great Lakes. West Lake and Consecon Lake, Prince Edward Co., Ont. (*Macoun.*) Wet sandy shore at Belleville, Ont. (*Burgess.*)

(2421.) **S. graminea,** Michx., Fl. II., 190; Pursh, Fl. II., 397.
S. sagittifolia, var. 4, *simplex,* Hook., Fl. II., 167, in part.
This seems to be a northern and eastern species. Newfoundland. (*Miss Brenton.*) Small lake near North Sydney, Cape Breton Island. (*Macoun.*) In water at Rothesay, and in a small lake near Richibucto; Grand Lake, and Upper St. John, and Clifton, N.B. (*Fowler, Cat.*) Gull River, Victoria Co., Ont. (*Macoun.*) Wet sandy shore of Lake Joseph, Port Cockburn, Muskoka Co., Ont. (*Burgess.*)

651. ECHINODORUS, Richard.

(2422.) **E. parvulus,** Engelm.; Gray, Man. Ed. V., 492.
E. subulatus, Engelm. (?) Agassiz, Lake Superior, 176.
North shore of Lake Superior. (*Agassiz.*) We know nothing of this species and enter it on the authority of Agassiz.

652. DAMASONIUM, Juss. Gen. 46.

(2423.) **D. Californicum,** Torrey, Pacif. R. Rep. IV., 142.
This species, or the one taken for it was growing in abundance in Somas River, at the head of the Alberni Canal, on the west coast of Vancouver Island. The large white flowers were especially attractive and caused me to stop in midstream and pull in shore to gather the plant. Owing to the great heat of the day these became so shrivelled in a short time as to be worthless for specimens, and were thrown away. Only one immature specimen was brought away, August 13th, 1887. (*Macoun.*)

CXV. NAIADACEÆ. Pond-weed Family.

653. TRIGLOCHIN, Linn. Gen. 453. (ARROW-GRASS.)

(2424.) **T. palustre,** Linn.; Hook., Fl. II., 168; Pursh, Fl. II., 247.
Not uncommon in wet sand along lakes and by ponds. Labrador.

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(*Dr. Morrison.*) Rather rare at Belledune, Carleton, Andover and Tobique River, N.B. (*Fowler, Cat.*) Marshes, Quebec. (*Pringle.*) Cacouna, St. Lawrence River. (*Burgess.*) Border of a marsh, Salt Lake, Anticosti; salt marsh, Cape Rosier, Gaspé, Q.; margin of the marshes around Presqu'ile Point, and Wellington Beach, Lake Ontario; quite common on the borders of brackish ponds, throughout the prairie region and northward to Battleford, Edmonton, and Little Slave Lake. (*Macoun.*) Charlton Island, James Bay, and Severn River, Keewatin. (*J. M. Macoun.*) Griswold, Man. (*Burman.*) Marshes between Carleton House, and Fort Edmonton, on the Saskatchewan. (*Hooker, Fl.*) Ounalashka and Sitka. (*Rothr. Alask.*) Bartlett Bay, Alaska. (*Meehan.*) Abundant in swamps and springy places from Morley westward to Hector, in the Rocky Mountains. (*Macoun.*)

(2425.) **T. maritimum,** Linn.; Hook., Fl. II., 168; Michx., Fl. I., 208; Pursh, Fl. I., 247.

Common in sea marshes on the Atlantic and Pacific coasts, and in the saline marshes of the prairie region. New Harbor, Newfoundland. (*Rev. A. C. Waghorne.*) Labrador. (*Dr. Morrison.*) Windsor, Halifax and Pictou, N.S. (*Sommers, Cat.*) Salt marsh at Truro, N.S., and North Sydney, Cape Breton. (*Macoun.*) Common in salt marshes along the coast; also at Carleton, N.B. (*Fowler, Cat.*) Salt Lake, Anticosti, and marshes along the Gaspé coast from Cape Rosier to Metis, Q. (*Macoun.*) Mingan Islands, St. Lawrence River. (*St. Cyr.*) Common all around James Bay. (*J. M. Macoun.*) York Factory and Fort Churchill, Hudson Bay. (*R. Bell.*) Salt marshes, Red Deer River, at the head of Lake Winnipegoosis; also at the source of the Qu'Appelle, and westward in salt marshes across the prairie to the Rocky Mountains at Canmore, Bow River valley. (*Macoun.*) Border of a saline pool near Wood Mountain, 49th parallel. (*Dawson.*) Abundant in marshes along the coast of Vancouver Island, from Victoria northward, and on the west coast, at Barclay Sound. (*Macoun.*) Sitka. (*Rothr. Alask.*) Fort Wrangel, Alaska. (*Meehan.*) Cumberland House to Rocky Mountains; and North-west coast. (*Hooker, Fl.*)

Var. **elatum,** Gray, Man. Ed. V., 491.

Peat bogs and borders of fresh water marshes. At the Gas Spring, Mer Bleue, near Ottawa. (*Fletcher, Fl. Ott.*) Marshes at the head of the Bay of Quinte, and in the "Big Swamp," Murray, Northumberland Co., Ont.; shore of Lake Huron, at Chicken Bay; on Pie Island, and at Red Rock, Lake Superior. (*Macoun.*) Swampy river flat, Southampton, Lake Huron, Ont. (*Burgess.*) Oba Lake, Ont. (*R. Bell.*) Lake Mistassini, N.E.T., and Severn River, Keewatin. (*J. M. Macoun.*)

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Swamps, Winnipeg and North-west Angle Road; near Pincher Creek, Alberta; at the Columbia Lakes and in the Columbia Valley, B.C. (*Dawson.*) Rather common in fresh water marshes along Beaver Creek Valley, at Stony Creek, Selkirk Mountains. (*Macoun.*)

654. SCHEUCHZERIA, Linn. Gen. 482. (SCHEUCHZERIA)

(2426.) **S. palustris,** Linn.; Michx., Fl. I., 209; Pursh, Fl. I., 247; Hook., Fl. II., 168.

Rather rare in most localities. Soft peat bogs, Richibucto, Fredericton, Tay's Mills, York Co.; St. Stephen, and McAdam Junction, N.B. (*Fowler, Cat.*) Mer Bleue, near Ottawa. (*Fletcher, Fl. Ott.*) Marsh near Prescott Junction, Ont.; rare. (*Billings.*) In a little pond in north western Seymour, and in a peat bog five miles north of Colborne, Northumberland Co.; very abundant along Gull Lake, Victoria Co., Ont. (*Macoun.*) Mossy bogs, London, Ont. (*Burgess. Millman.*) Parry Sound, Georgian Bay. (*Burgess.*) Between Trout Lake and the Severn River, Keewatin. (*J. M. Macoun.*) Between Hudson Bay and Cumberland House; and upon "The Height of Land," Rocky Mountains. (*Hooker, Fl.*)

655. LILÆA, Humb. & Bonpl.

(2427.) **L. subulata,** HBK. Nov. Gen. I., 222.

Heterostylus gramineus, Hook., Fl. II., 171.

Abundant in mud between high and low water, Somas River, Alberni, west coast of Vancouver Island. Water always fresh. (*Macoun.*)

656. POTAMOGETON, Linn. Gen. 174. (POND-WEED)

(2428.) **P. natans,** Linn.; Michx., Fl. I., 101; Pursh, Fl. I., 120; Hook., Fl. II., 171.

Quite common in lakes, ponds, and stagnant pools, throughout the country. Cow Bay, and Halifax, N.S. (*Sommers, Cat.*) Marshes near Cape Blomidon, N.S., and in lakelets, North Sydney, Cape Breton; in a pond at Salt Lake, Anticosti, and in lakelets along the Gaspé coast Q. (*Macoun.*) In slow flowing waters, Salmon River, Kent Co., and Clifton, N.B. (*Fowler, Cat.*) River St. Pierre, near Montreal, 1821. (*Dr. Holmes.*) Abundant in the River Rouge, in quiet places, Argen-

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teuil Co., Q. (*D'Urban.*) Abundant around Ottawa. (*Fletcher, Fl. Ott.*) Railroad Bay, near Prescott, Ont. (*Billings.*) Very common in nearly all still waters throughout central Ontario. (*Macoun.*) Burlington Bay, near the beach, Hamilton, Ont. (*Logie.*) In still water at Kingston, Ont. (*Millman.*) Marshes at Point Edward, Lake Huron. (*J. M. Macoun.*) Still waters, Owen Sound, Ont., and in the Kaministiqua River, fifteen miles from its mouth, and in Lake Hannah, Nipigon River. (*Macoun.*) Lake Missinaibi, Ont. (*R. Bell.*) Lake of the Woods. (*Dawson.*) Not uncommon in ponds throughout the prairie region and northward to Lake Athabasca; not uncommon in Lost Lake, Shawnigan Lake, Horne Lake and Sproat Lake, Vancouver Island. (*Macoun.*) Near Victoria, Vancouver Island. (*Fletcher.*) Sitka. (*Rothr. Alask.*) Stagnant waters, Canada to Hudson Bay. (*Hooker, Fl.*)

Var. **prolixus,** Koch.; Gray, Man. Ed. V., 485.

P. natans, var *β.* (?) Hook., Fl. II., 171.

Collected in flowing water near Ottawa. (*McGill Coll. Herb.*) A form approaching this variety was sent from London, Ont., by Burgess (*Macoun.*) North West America. (*Hooker, Fl.*) Specimens should be gathered of all forms.

(2429.) **P. Oakesianus,** Robbins, Gray, Man. Ed. V., 485.

Apparently a rare species in Canada. In marshes at Ellis Bay, Anticosti, 1883. (*Macoun.*)

(2430.) **P. Claytonii,** Tuckerman, Amer. Journ. Sci. XLV., 38.

Not uncommon but seldom collected. Hampton, Salmon River, and Norton, N.B.; rather common. (*Fowler, Cat.*) In flowing water at Hull, Q.; abundant in streams, North Hastings; common in Gull River, between Gull Lake and Minden, Victoria Co.; in Gull Lake, Barrie, Addington Co.; also in the river connecting Lake Isaac and Sky Lake, Bruce Co., Ont. (*Macoun.*) Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Blackstone Lake, Muskoka, Ont. (*Burgess.*)

(2431.) **P. Vaseyi,** Robbins, Gray, Man. Ed. V., 485.

Apparently rare in Canada. Crow River, above the dam at the Iron Works, Marmora, July 19th, 1864; Big Mud Turtle Lake, Gull River, Victoria Co., Ont. (*Macoun.*) Rideau Canal, Ottawa. Form with floating leaves and fruit. (*Fletcher, Fl. Ott.*) In 1865 this species was sent to Sir William Hooker as *P. diversifolius,* Barton, and believed by him to be that species, but later investigation showed that Barton's species went with *P. hybridus.* About the same time

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specimens were sent to Mr. W. M. Canby and Dr. Vasey, under the name mentioned above, and are likely in their collections now.

(2432.) **P. Spirillus,** Tuckerman, Amer. Journ. Sci. VI. (2,Ser.) 228.

P. diversifolius, Hook., Fl. II., 172.

A lovely species growing in flowing water, chiefly in the Laurentian districts of Ontario. In the Kennebeccasis at Norton; Lake Utopia and Salmon River, N.B. (*Fowler, Cat.*) Abundant in the Grand River, at Ottawa. (*Fletcher, Fl. Ott.*) In flowing water at Hull, Q.; in numerous streams, North Hastings, at Partridge Lake, Grimpsthorpe and in Crow River at Marmora Iron Works; Gull River, at Elliott's Falls, and in Mountain Lake above Minden, Victoria Co., Ont. (*Macoun.*) Norway House, head of Lake Winnipeg, to Canada. (*Hooker, Fl.*)

(2433.) **P. hybridus,** Michx., Fl. I., 101.

P. setaceus, Pursh, Fl. I., 120.

P. filiformis, Pursh, Herb.; Tucker. Amer. Journ. Sci. VI. (2, Ser.) 230.

St. James, and St. Stephens, N.B. (*Vroom.*) Although we strongly suspect that the plants referred here are *P. Spirillus,* there is no reason to doubt the occurrence of the species so far north.

(2434.) **P. rufescens,** Schrader; Hook., Fl. II., 172.

P. fluitans, Pursh, Fl. I., 120.

P. natans, var. *fluitans,* Torrey.; Bot. N. York II., 254.

Apparently a rare but widely diffused species. St. Stephen, N.B. (*Vroom.*) In flowing waters, Truro, N.S.; River Ste. Anne des Monts, Gaspé, Q.; abundant in flowing water in the River Trent, at the "Narrows" and in Crow River at Marmora Iron Works; also in the North River, Belmont and in Big Bushkong Lake, Victoria Co., Ont.; Current River, Lake Superior. (*Macoun.*) River Mistassini, near Lake St. John, Q. (*Michaux.*) Rapids of the Niagara River, near Bath Island. (*Tuckerman.*) Lake Mistassini, N.E.T. (*J. M. Macoun.*) Michipicotin River, Ont., and Nelson River. Keewatin. (*R. Bell.*) Abundant in the mill stream at Nanaimo, Vancouver Island. (*Macoun.*) Ounalashka. (*Rothr. Alask.*) Stagnant waters, Canada to Hudson Bay. (*Hooker, Fl.*)

(2435.) **P. lonchites,** Tuckerman, Amer. Journ. Sci. VI. (2, Ser.) 226.

Apparently very rare or overlooked. Tobique Lakes, N.B. (*Hay.*) Abundant at Ottawa. A form with remarkably long stipules. (*Fletcher, Fl. Ott.*) In ponds, London. Ont. (*Burgess.*) Niagara Rapids, near Bath Island, Niagara River. (*Tuckerman.*)

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(2436.) **P. amplifolius,** Tuckerman, Amer. Journ. Sci. VI. (2, Ser.) 226.

Not rare in deep and still water, but seldom collected. In the mill pond at Stirling; and Elziver, Hastings Co.; Gull Lake, Barrie, Addington Co.; at the lower end of Big Bushkong Lake, Victoria Co., and in the Potawatamie River, above Jones Falls, Owen Sound, Ont. (*Macoun.*) In water, Parry Sound, Georgian Bay. (*Burgess.*) King's Mere and Meech's Lake, in the Chelsea Mountains, near Ottawa. (*Fletcher, Fl. Ott.*) Missinaibi River and Lake, Ont. (*R. Bell.*) Marshes, Burlington Bay, Hamilton, Ont. (*Logie.*) Niagara River, on the Canadian side. (*Tuckerman.*) Near Victoria, Vancouver Island. (*Fletcher.*)

(2437.) **P. gramineus,** Linn.; Gray, Man. Ed. V., 487.

P. heterophyllus, Schreb.; Hook., Fl. II., 172; Pursh, Fl. I., 120.

Common in streams from the Atlantic to the Pacific. In flowing water at Coal Branch, Kent Co.; Tobique River, and Salmon River, N.B. (*Fowler, Cat.*) Lake Utopia, N.B. (*Wetmore.*) Little Tobique Lake, N.B. (*Hay.*) Titusville, N.B. (*Brittain.*) Flowing water at Truro, N.S.; Salt Lake, Anticosti; in a rapid stream between Westwood and Peterboro, Ont; vicinity of Belleville, Hastings Co., Ont.; River St. Clair, near Windsor, Ont. (*Macoun.*) Wabigoon River, west of Lake Superior. (*Fletcher.*)

Var. (near) **graminifolius,** Fries.

In shallow water, Lake Mistassini, N.E.T. (*J. M. Macoun.*) Ottawa River. (*Fletcher, Fl. Ott.*)

Var. **maximus,** Morong.

Flowing water, Becscie River, Anticosti. (*Macoun.*) Not uncommon at Ottawa. (*Fletcher, Fl. Ott.*)

Var. **heterophyllus,** Fries.

The common form and found throughout the country. Grand Vallée, Gaspé coast, Q. (*Macoun.*). Abundant in the vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Nation River, Ont. (*Billings.*) Mud Lake, near Kingston, Ont. (*Millman.*) Near Belleville, Hastings Co., and general throughout central Ontario in rivers, lakes and ponds, and westward to Lake Superior, where it is particularly abundant. (*Macoun.*) Parry Sound, Georgian Bay. (*Burgess.*) Lake Mistassini, N.E.T., and Missinaibi River, Ont. (*J. M. Macoun.*) Oba Lake, Ont. (*R. Bell.*) Jones Falls, Ont. (*Millman.*) Abundant in fresh water ponds throughout the prairie region, through the Rocky Mountains, and west-

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ward to the Pacific, where it becomes common in ponds and lakes on Vancouver Island, near Victoria, Nanaimo, Qualicum and Alberni. (*Macoun.*) Cumberland House on the Saskatchewan. (*Hooker, Fl.*)

(2438.) **P. lucens,** Linn.; Gray, Man. Ed. V., 487.

Pictou Co., N.S. (*McKay.*) St. Lawrence River, at Prescott, Ont. (*Billings.*) Bay of Quinte, and in the mill pond at Stirling, and in Elziver, Hastings Co.; also in the still waters of the Trent River, Seymour, Northumberland Co., Ont. (*Macoun.*) Nelson River, Keewatin. (*R. Bell.*)

(2439.) **P. Zizii,** Mertens & Koch.

P. lucens, var. *minor,* Nolte; Gray, Man. Ed. V., 488; Macoun, Cat. No. 1734, var. *minor.*

Apparently rare in Canada. Nation River at Casselman, near Ottawa; Big Bushkong and other lakes up Gull River, Victoria Co., Ont. (*Macoun.*) Vicinity of Hamilton, Ont. (*Buchan.*) Meech's Lake, near Chelsea, Q. (*Fletcher, Fl. Ott.*)

(2440.) **P. præiongus,** Wulfen.; Hook., Fl. II., 172.

P. lucens, Michx., Fl. I., 102; Pursh, Fl. I. 120.

Not uncommon in deep water of lakes and quiet rivers. Earltown Lakes, Colchester Co., N.S. (*McKay.*) Bass River, Kent Co.; Tobique Lake, N.B. (*Fowler, Cat.*) Woodstock, N.B. (*Hay.*) St. Stephen, N.B. (*Vroom.*) St. Lawrence River, near Point St. Charles, Montreal, 1821. (*Dr. Holmes.*) Bay of Quinte, at Belleville; Weller's Bay, Lake Ontario, and in deep water in the River Trent, Seymour, Northumberland Co.; abundant in Lake Superior, at the mouth of the Kaministiqua, and in the lake expansions of Nipigon River. (*Macoun.*) Goulais River, Lake Superior. (*R. Bell.*) In the Athabasca River, above Lake Athabasca, lat. 58°; Lost Lake, near Cedar Hill, and Langford and Shawnigan lakes, near Goldstream, Vancouver Island. (*Macoun.*) English River, north of the Saskatchewan. (*Hooker, Fl.*)

(2441.) **P. perfoliatus,** Linn.; Michx., Fl. I., 101; Pursh, Fl. I., 120; Hook., Fl. II., 172.

Rather common in rivers and lakes throughout the country. Cow Bay, Halifax Co., N.S. (*Sommers, Cat.*) Ponds and slow streams, Norton, N.B. (*Fowler, Cat.*) Becscie River, Anticosti. (*Macoun.*) Rivers of the north shore of the Gulf of St. Lawrence. (*St. Cyr.*) Rivière du Loup, Q. (*Thomas.*) River St. Pierre and at Three Rivers, Q. 1821. (*Dr. Holmes.*) Green's Creek, Ottawa; very rare, only once collected. (*Fletcher, Fl. Ott.*) Abundant in the Bay of Quinte, and at

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Weller's Bay, Lake Ontario. (*Macoun.*) Kemptville, Ont. (*Porter.*) Kingston, Ont. (*Millman.*) Canada to Slave River. (*Hooker, Fl.*)

Var. **lanceolatus,** Robbins, Gray, Man. Ed. V., 488.

This seems to be the western and northern form, as it is abundant westward where the species seems to be absent. St. Clair Flats, Ont. (*J. M. Macoun.*) Abundant at Ottawa, in all waters. (*Fletcher, Fl. Ott.*) Lake of the Woods. (*Burgess.*) In the still waters of the lake expansions of Nipigon River, and in the mouths of rivers north of Lake Superior. (*Macoun.*) Lake Mistassini, N.E.T.; and Missinaibi River, Ont. (*J. M. Macoun.*) James Bay, at Moose Factory. (*Cottar & Dr. Hayden.*) Nelson River, Keewatin. (*R. Bell.*) Moose Mountain Creek, Man. (*J. M. Macoun.*) Long Lake, north of Regina, Assiniboia; in a small pond on Copper Mountain, Rocky Mountains. (*Macoun.*) Lewes River, lat. 62°. (*Dawson.*)

(2442.) **P. zosterifolius,** Schum.; Hook., Fl. II., 172.

P. compressus, Fries.; Gray, Man. Ed. V., 488; Macoun, Cat. No. 1732.

Rather common in still water. Still and slow flowing water, St. John, N.B. (*Fowler, Cat.*) Vicinity of Ottawa; common. (*Fletcher, Fl. Ott.*) Near Montreal, 1821. (*Dr. Holmes.*) St. Lawrence River and slow streams; common at Prescott, Ont. (*Billings.*) Jones Falls, Rideau River, Ont. (*Millman.*) London, Ont. (*Burgess.*) Abundant in the Bay of Quinte, and in all the rivers in central Ontario; Gull River, Peterboro Co., Ont., and in Lake Hannah, Nipigon River, Lake Superior. (*Macoun.*) Oba Lake and river, and Missinaibi River, Ont. (*R. Bell.*) Burlington Marsh, Hamilton, Ont. (*Buchan.*) York Factory, Hudson Bay, and from Cumberland House, on the Saskatchewan, to Portage La Loche, lat. 57°. (*Hooker, Fl.*)

(2443.) **P. obtusifolius,** Mertens & Koch.

A few specimens were gathered in mud on the margin of a small lakelet near Point Fame Lighthouse, Gaspé coast, Q., in August, 1882. (*Macoun.*)

(2444.) **P. pauciflorus,** Pursh, Fl. I., 121.

P. gramineum, Michx., Fl. I., 102.
P. pusillum, Hook., Fl. II., 172.

Not uncommon in still water. Restigouche River, N.B.; rather doubtful. (*Fowler, Cat.*) Madeline River, Gaspé, Q.; abundant in the Bay of Quinte, and in the Trent River at Trenton; also Gull River, Peterboro Co., Ont. (*Macoun.*) Smith's Falls, Ont. (*Prof. Fowler.*) Billings Bridge, Ottawa. (*Fletcher, Fl. Ott.*) Marsh at Hamilton, Ont.

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(*Buchan.*) North shore of Lake Superior. (*Agassiz.*) Lake Mistassini, N.E.T. (*J. M. Macoun.*) Fort Carleton, Saskatchewan River. (*Macoun.*) Cumberland House to York Factory, on Hudson Bay. (*Hooker, Fl.*)

Var. **Niagarensis,** Gray.

P. Niagarensis, Tuckerman, Amer. Journ. Sci. (2, Ser.) VII., 354.

Rapids above Niagara Falls. (*Burgess.*) Niagara River, near the brink of the Hog's Back, growing plentifully with *Udora;* and elsewhere in the river. (*Tuckerman.*)

(2445.) **P. pusillus,** Linn.; Gray, Man. Ed. V., 488.

Rather common in ditches and slow streams. In ditches at Halifax, N.S. (*Macoun.*) Little Rocher, N.B. (*Fowler, Cat.*) Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Common in streams inland, from Prescott, Ont. (*Billings.*) Grand Vallée, Gaspé coast, Q.; in flowing water at Hull, Q.; in the River Trent, at Trenton, and abundant in still waters and ditches throughout central Ontario. (*Macoun.*) Cockburn Island, Georgian Bay. (*J. Bell.*) Jones Falls, Rideau River. (*Millman.*) Little Saskatchewan, near Rapid City, and not uncommon in pools in the prairie region. (*Macoun.*) Lake of the Woods. (*Burgess.*) Lake Mistassini, N. E. T. (*J. M. Macoun.*) Specimens referred here were collected at Fort McLeod, B.C., lat. 55°. (*Macoun.*)

Var. **vulgaris,** Fries.; Gray, Man. Ed. V., 489.

This is a longer and more branching form, with generally cylindrical and interrupted spikes. Madeline River, Gaspé, Q.; Gull River, Victoria Co.; in deep water, Trent River, Seymour, Northumberland Co., Ont.; Shawnigan Lake, Vancouver Island. (*Macoun.*) The commonest form at Ottawa. (*Fletcher, Fl. Ott.*)

Var. **panormitanus,** Biv.

Rideau Canal, near Ottawa. (*Fletcher, Fl. Ott.*)

Mr. Morong writes of this variety: "I have carefully compared these (Mr. Fletcher's specimens) with the plant sent me as *P. pusillus,* L., var. *panormitanus,* Biv., and can see no essential difference. In my specimens the (submerged) leaves are shorter, they are not ruddy at all, and none revolute. The description of the variety, however, corresponds "leaves longer," (than the type) flaccid, the upper flowering ones opposite and spatulate, the whole surface of the leaf with a pretty chain-like areolation." I am sure that your plant meets this description, and when compared as to the floating leaves the specimens agree. I should not, however, regard it as a distinct species, since it

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bears so many of the characteristics of *pusillus*. The ruddy tinge and revolute leaves may be owing to the season or accidental circumstances.

(2446.) **P. mucronatus,** Schrader.

P. pusillus, var. *major*, Fries.; Gray, Man. Ed. V., 489.
P. obtusifolius, Macoun, Cat. No. 1737.

Rather uncommon but very likely overlooked. St. Stephen, and Little Rocher, N.B. (*Fowler, Cat.*) Brackish ponds, Salt Lake, Anticosti; abundant in a brook, North Hastings, Ont.; marshes at the mouth of Nipigon River, Lake Superior. (*Macoun.*) Muskeg Creek, Lake Winnipeg, Man.; and Missinaibi River, Ont. (*J. M. Macoun.*) Long Lake, and Reed Lake, Assiniboia. (*Macoun.*) In the Red River at Emerson, Man. (*Prof. Fowler.*)

(2447.) **P. rutilans,** Wolfgang.

In marshes at Ellis Bay, Anticosti, 1883; also in abundance in marshes at the mouth of the Nipigon River, near Red Rock, Lake Superior, 1884. (*Macoun.*) On South Twin Island, James Bay, 1887. (*J. M. Macoun.*) These are the only known localities for this species in America.

(2448.) **P. marinus,** Linn.; Michx., Fl. I., 102.

P. pectinatus, var. *latifolius*, Watson; Macoun, Cat. No. 1739, var.
P. pectinatus, var. β, Hook., Fl. II., 172.

Chiefly in brackish marshes on the sea-coast and in the prairie region. Brackish ponds, Salt Lake, Anticosti; Madeline River, Gaspé coast, Q. (*Macoun.*) Shore of the Gulf of St. Lawrence. (*St. Cyr.*) Missinaibi Lake and Nelson River. (*R. Bell.*) Lake Mista-sini, N.E.T.; Moose Mountain Creek, Man. (*J. M. Macoun.*) Common in the larger pools throughout the prairie region. (*Macoun.*) Ten miles above Spence's Bridge, B.C. (*Fletcher.*) Further examination will doubtless show that much of the material now referred to *P. pectinatus* is really this species.

Var. **Macounii,** Morong. (MS.)

This is a broad-leaved and very distinct form, and cannot be referred to *R. marinus*, var. *occidentalis*, although near it, by Rev. T. Morong, who names it as above. Brackish, and salt lakes, prairie region. Old Wives Lakes, and in Crawling Valley, south of the Hand Hills, Alberta. (*Macoun.*)

(2449.) **P. pectinatus,** Linn.; Pursh, Fl. I., 121.

P. pectinatus, var. *a.*, Hook., Fl. II., 172.

Widely distributed or confounded with *P. marinus*. In ponds at

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Baddeck, Cape Breton. (*Macoun.*) Harris Cove, Norton, and Clifton, N.B. (*Fowler, Cat.*) Along the River St. Lawrence, Q. (*St. Cyr.*) Common in the vicinity of Ottawa. The typical form. (*Fletcher, Fl. Ott.*) St. Lawrence River, Conway's Creek, Nation River, and near Prescott, Ont. (*Billings.*) Jones Falls, Rideau River, Ont. (*Millman.*) Very common in all the streams in central Ontario, and extending westerly to Victoria Co. (*Macoun.*) Marsh at Hamilton, Ont. (*Logie.*) London, Ont. (*Burgess.*) South Twin Island, James Bay, and Severn River, Keewatin. (*J. M. Macoun.*) James Bay, near Moose Factory. (*Cottar & Dr. Hayden.*) Moose Mountain Creek, Man. (*J. M. Macoun.*) Abundant in the Sydenham River, at Owen Sound, and in all the streams entering Lake Superior; Reed Lake, Assiniboia, and in Red Deer River, Man.; not uncommon in pools and slow flowing streams from Morley westward through the Rocky Mountains to the Columbia; in Somas and Stamp rivers, Alberni, west coast of Vancouver Island. (*Macoun.*) Crow Nest Pass, Rocky Mountains; Lewes River, lat. 62° N. of British Columbia. (*Dawson.*) Canada to English River, and from Hudson Bay to alpine lakes in the Rocky Mountains. (*Hooker, Fl.*) Greenland. (*Lange.*)

Two very marked forms were found growing together at Black Rapids, Rideau River, near Ottawa, by Mr. Fletcher. Of these forms Mr. Morong writes him:—

(I.) "There is no varietal name for this form, but it is bushy and densely clothed with fine setaceous leaves, and might be called var. *tenuissimus*, as you suggest.

(II.) This form approaches the "var. (?) *latifolius*" of Robbins, some of the leaves three nerved."

(2450.) **P. Robbinsii,** Oakes, Hov. Mag. VII., 128.

Growing usually in deep water and seldom maturing its fruit. Petitcodiac and Hampton; also Tobique Lakes, N.B. (*Fowler, Cat.*) Little Nictau Lake, N.B. (*Hay.*) Meech's Lake, Chelsea, Q. (*Fletcher, Fl. Ott.*) Partridge Lake, Addington Co.; Crow River, Marmora Iron Works; Oak Hill Pond, near Stirling, Hastings Co.; Gull River, near Elliott's Falls, and Gull Lake, near Minden, Victoria Co.; and in the mouth of Nipigon River, Lake Superior. (*Macoun.*) Oba Lake and Missinaibi River, Ont. (*R. Bell.*) Lost Lake, near Cedar Hill, and abundant and fruiting in the Somas River at Alberni, on the west coast of Vancouver Island. (*Macoun.*)

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657. RUPPIA, Linn. Gen. 175. (DITCH-GRASS.)

(2451.) **R. maritima,** Linn.; Pursh, Fl. I., 121; Hook., Fl. II. 170.

Generally in salt ponds by the sea-coast. Abundant at Yarmouth, N.S., and in salt ponds at Baddeck, Cape Breton. (*Macoun.*) Growing under water in estuaries of rivers flowing into the Gulf of St. Lawrence, New Brunswick coast. (*Fowler, Cat.*) St. Andrews, N.B. (*Vroom.*) Pokeseudie Gully, Gloucester Co., N.B. (*Hay.*) Growing profusely in the northern end of Old Wives Lakes, Assiniboia, near the Canadian Pacific Railway; in salt ponds at Qualicum and Alberni, Vancouver Island. (*Macoun.*)

658. ZANNICHELLIA, Linn. Gen. 1034. (HORNED PONDWEED)

(2452.) **Z. palustris,** Linn.; Pursh, Fl. I., 4; Hook., Fl. II., 170.

Freshwater, and brackish ponds and ditches; not rare. In the salt marsh near Truro, and at Yarmouth, N.S.; salt ponds at Baddeck, Cape Breton. (*Macoun & Burgess.*) Growing under water in streams rendered brackish by the tides. Richibucto and Spurr's Cove, N.B. (*Fowler, Cat.*) Salt Lake, Anticosti. (*Macoun.*) Not uncommon at Ottawa. (*Fletcher, Fl. Ott.*) Pools by the St. Lawrence River, at Prescott, Ont. (*Billings.*) Marshy ponds near Rednersville, Bay of Quinte, and in a ditch between Taylor's Hill and the River Moira, Belleville, Ont. (*Macoun.*) Lake Mistassini, N.E.T.; Moose Mountain Creek, Man. (*J. M. Macoun.*) In "The River that Turns," near the Elbow of the South Saskatchewan, and numerous brackish ponds throughout the prairie region. (*Macoun.*)

659. ZOSTERA, Linn. Gen. 1032. (GRASS-WRACK.)

(2453.) **Z. marina,** Linn.; Pursh, Fl. I., 2.

Between high and low tide on both the east and west coasts. Halifax, N.S. (*Sommers, Cat.*) On the sea-coast at Yarmouth, and on McNab's Island, Halifax Harbor, N.S. (*Macoun.*) Common along the coasts of Nova Scotia and Newfoundland. (*McKay.*) Growing under water in shallow places along the Gulf coast, N.B. (*Fowler, Cat.*) Salt Lake, Anticosti; common around the Bay of Chaleur and up the

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Gaspé coast of the St. Lawrence; abundant on both the east and west coasts of Vancouver Island, always about low water mark. (*Macoun.*) Ounalashka. (*Rothr. Alask.*) Greenland. (*Lange.*)

660. PHYLLOSPADIX, Hook., Fl. II., 171. (FALSE EEL-GRASS)

(2454.) **P. Scouleri,** Hook., Fl. II., 171.

Abundant on steep rocks below half tide, from the lighthouse, near Victoria, around the coast to Esquimault Harbor; very common in the same situations on all the islands in the outer part of Barclay Sound, on the west coast of Vancouver Island. (*Macoun.*)

Although much like *Z. marina* in general appearance, its place of growth differs so materially that the two species need never be confounded, as this always grows on steep rocks or on boulders, while the other delights in pools with a bottom of shell mud. Fine fruiting specimens were obtained in July and August, 1887. It is very likely quite common on the Pacific coast, but usually confounded with *Z. marina.*

661. NAIAS, Linn. Gen. 1096. (NAIAD)

(2455.) **N. flexilis,** Rostk. & Schmidt.

N. Canadensis, Michx., Fl. II., 220; Pursh, Fl. II., 602; Hook., Fl. II., 170.
Caulina flexilis, Willd.; Pursh, Fl. I., 2.

Locally abundant and widely distributed, extending from the Atlantic to the Pacific. Lake St. John, Q. (*Michaux.*) Earlstown Lakes, Colchester Co., N.S. (*McKay.*) Amqui, Metapedia River, Q. (*Macoun.*) Potter's Lake, St. Stephen, N.B. (*Fowler, Cat.*) Nation River at Casselman, and other places near Ottawa. (*Fletcher, Fl. Ott.*) Lake Ontario, at Kingston, Ont. (*Millman.*) Bay of Quinte, and in still water in all rivers and lakes of central Ontario; also Sydenham River, Owen Sound, Ont. (*Macoun.*) Point Edward, River St. Clair, Ont.; Lake Mistassini, N.E.T. (*J. M. Macoun.*) Head of the canal, Sault Ste Marie, Lake Superior; occasionally met with in lakes north of the prairie; English Lake, near Fort Pitt, Saskatchewan River a few very depauperate specimens, Sproat Lake, Alberni, Vancouver Island. (*Macoun.*)

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CXVII. ERIOCAULEÆ. Pipewort Family.

662. ERIOCAULON, Linn. Gen. 100. (PIPEWORT)

(2456.) **E. septangulare,** With.; Hook., Fl. II., 187.

E. pellucidum, Michx., Fl. I., 166; Pursh, Fl. I., 92.

In soft mud on the borders of lakes and ponds. Newfoundland. (*Dr. Morrison.*) Halifax and Mahone Bay, N.S. (*Sommers, Cat.*) Pictou Co., and Magdalen Islands, N.S. (*McKay.*) Caledonia, Guysboro Co., N.S. (*Faribault.*) In a small lake, North Sydney, Cape Breton. (*Macoun & Burgess.*) Lily Lake, Dark Lake, Welsford, and St. Stephen, N.B. (*Fowler, Cat.*) Tadousac Lake, Q. (*A. T. Drummond.*) Trembling Lake, Argenteuil Co., Q. (*D'Urban.*) Border of Partridge Lake, and Gull Lake, Addington Co.; Hooper's Lake, Hastings Co.; very common in the small lakes in Peterboro and Victoria Co's., Ont.; also Birch Lake, north-east of Lake Superior. (*Macoun.*) Abundant in a lake two miles from Sudbury, Ont., (*Fletcher.*) St. Joseph Island, Georgian Bay. (*J. Bell.*) Pancake River, Ont., near its mouth, growing on mud in a little cove. (*R. Bell.*) Port Cockburn, Lake Joseph, Muskoka Co., Ont. (*Burgess.*) Canada to the Saskatchewan. (*Hooker, Fl.*)

CXVII. CYPERACEÆ. Sedge Family.

663. CYPERUS, Linn. Gen. 66. (GALINGALE)

(2457.) **C. diandrus,** Torr. Cyp. 342; Hook., Fl. II., 232.

Low ground around springs, and in marshes by lakes and ponds. Fredericton, N.B. (*Fowler, Cat.*) Riverside, King's Co., N.B. (*Wetmore.*) In clefts of rocks on the shore of the St. Lawrence, at Montreal, and at Niagara Falls. (*W. F. McCrea.*) In all low spots in the vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Common along the St. Lawrence, at Prescott., Ont. (*Billings.*) Kemptville, Ont. (*Porter.*) Low grounds at Kingston, and London, Ont. (*Burgess. Millman.*) Very common at Belleville, and in the marshes of the Bay of Quinte, Ont. (*Macoun.*) Marshes at Hamilton, Ont. (*Buchan.*) Banks of Kettle Creek, St. Thomas, Ont. (*Saunders.*) Swampy ground, Owen Sound, Ont. (*Macoun.*) Point Edward, River St. Clair, Ont. (*J. M. Macoun.*) Canada. (*Goldie.*)

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Var. **castaneus,** Torrey, Cyp. 251.

C. flavescens, var. *β. castaneus,* Pursh, Fl. I., 52.

Abundant in marshes at Belleville, and at the head of the Bay of Quinte, near the Murray Canal, Ont. (*Macoun.*) Niagara Falls. (*W. F. McCrea.*)

(2458.) **C. flavescens,** Linn.; Gray, Man. Ed. V., 552.

Credited to Canada by Prof. L. N. Britton, in his Revision of this genus. We have never seen a Canadian specimen. It should be looked for along the New Brunswick coast.

(2459.) **C. aristatus,** Rottb.; Britton. Bull. Torr. Bot. XIII., 207.

C. inflexus, Muhl.; Hook., Fl. II., 232; Macoun, Cat. No. 1909.
C. uncinatus, Pursh, Fl. I., 50.

Gravel in the beds of rivers, apparently very local. Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) West Rideau Lake, Ont. (*Porter.*) Gravelly bed of the river Moira, at Belleville, Hastings Co; also in the bed of the River Trent, at Trenton, Myersburg, and Heely Falls, Northumberland Co., Ont.; rather uncommon at Somas Falls, four miles from Alberni, west coast of Vancouver Island. (*Macoun.*) Saskatchewan and Lake Winnipeg. (*Hooker, Fl.*)

(2460.) **C. Schweinitzii,** Torr. Cyp., 276.

Sandy shores of lakes and rivers, and on sand hills on the prairies. On sand on the beach along the lake shore at Hamilton, Ont. (*Burgess. Millman.*) Point Pelée, Lake Erie. (*Burgess.*) Port Colborne, Lake Erie, and Point Edward, Lake Huron, Ont.; Hungry Hall, Rainy River, and on sand banks where that river enters the Lake of the Woods; on sand hills near the source of the Qu'Appelle, and at Old Wives Lakes, Assiniboia. (*Macoun.*)

(2461.) **C. esculentus,** Linn., Britton, Bull. Torr. Bot. XIII., 210.

C. phymatodes, Muhl.; Gray, Man. Ed. V., 554.
C. repens, Ell.; Hook., Fl. II., 232.
C. tuberosus, Vahl.; Pursh, Fl. I., 52.

On the banks of rivers, chiefly in wet sand. Sandy bank of Kennebeccasis; Norton, and Fredericton, N.B. (*Fowler, Cat.*) Gatineau Point, on the Ottawa, Q.; in wet sand at Niagara Town, and near Queenston Heights, along the railway. (*Macoun.*) In great abundance below Parliament Hill, Ottawa. (*Fletcher, Fl. Ott.*) Low grounds, London, Ont. (*Burgess. Millman.*) Point Pelée and Point Aux Pins, Lake Erie, Ont. (*Burgess.*) Upper Canada. (*Goldie.*)

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(2462.) **S. strigosus.** Linn.; Hook., Fl. II., 232; Pursh, Fl. I., 52.

C. Michauxianus, Schultes.; Gray, Man. Ed. V., 554.
C. flavicomus, Vahl.; Michx., Fl. I., 27; Pursh, Fl. I., 53.

Not uncommon in Ontario in cold wet pastures and meadows. Nun's Island, Montreal, and Niagara Falls. (*W. F. McCrea.*) Wet place, near the outlet of the Rideau Canal, Ottawa. (*St. Cyr.*) Along the Rideau River at Ottawa. (*Fletcher, Fl. Ott.*) In a little marsh on the banks of the St. Lawrence, one mile west of Brockville, Ont. (*Billings.*) West Rideau Lake, Ont. (*Porter.*) Low wet meadows and boggy places, Kingston, Ont. (*Millman.*) Kingston, Ont.; Point Pelée, Lake Erie; Point Aux Pins, Lake Erie. (*Burgess.*) Boggy ground, Gatineau Point, near Ottawa,; wet grassy places along the Bay of Quinte, at Belleville, and in a sandy field at the Murray Canal, near Trenton; near Salt Creek bridge, Brighton, Northumberland Co.; and on an island in Rice Lake; Port Colborne, Lake Erie. (*Macoun.*) Point Edward, Lake Huron. (*J. M. Macoun.*) Vicinity of Hamilton, Ont. (*Buchan.*) Upper Canada to the Saskatchewan. (*Hooker, Fl.*)

(2463.) **C. erythrorhizos,** Muhl.; Gray, Man. Ed. V., 552.

Apparently confined to south western Ontario. Point Aux Pins, Lake Erie. (*Burgess.*)

(2464.) **C. filiculmis,** Vahl.; Pursh, Fl. I., 52.

C. mariscoides, Ell.; Torr., Fl. I., 63.
C. Kyllingæoides, Vahl.; Pursh, Fl. I., 50.

Dry sandy woods or fields, not uncommon in central Ontario. Common on Massassagua Point, Bay of Quinte, Ont; sand hills at Murray Townhall, and on Rice Lake Plains, Northumberland Co., Ont.; in sandy fields and thickets at Point Edward, Lake Huron. (*Macoun.*) Sandy meadows, London, Ont. (*Burgess. Millman.*) Point Aux Pins, Lake Erie. (*Burgess.*) Vicinity of Hamilton, Ont. (*Buchan.*)

664. DULICHIUM, Pers. (DULICHIUM)

(2465.) **D. spathaceum,** Pers.; Hook., Fl. II., 232; Pursh, Fl. I., 53.

D. Canadense, Pers.; Pursh, Fl. I., 54.
Scirpus spathaceus, Michx., Fl. I., 32.

Not uncommon in marshes and by lake borders, from the Atlantic to the Pacific. Halifax, N.S. (*Sommers. Macoun.*) Caledonia, Guysboro Co., N.S. (*Faribault.*) Earlston Lakes, Pictou Co., N.S. (*McKay.*) Very wet places, Kent Co.; and Norton, N.B. (*Fowler, Cat.*) Beau-

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mont, Bellechasse Co., Q. (*St. Cyr.*) Swampy ground, near Hamilton's Farm, Argenteuil Co., Q. (*D'Urban.*) Kemptville, Ont. (*Porter.*) Casselman and several other places near Ottawa. (*Fletcher, Fl. Ott.*) Common in marshes at Prescott, Ont. (*Billings.*) Quite common at Belleville and throughout central Ontario. (*Macoun.*) Mossy bog, London, Ont. (*Burgess. Millman.*) Moon River, Muskoka Co., Ont. (*Burgess.*) Sou-sou-wa-ga-mi Creek, Lake Huron; Michipicotin to Lake Missinaibi, Ont. (*R. Bell.*) In a marsh at Langford Lake, and in a marsh at Sproat Lake, Alberni, west coast of Vancouver Island. (*Macoun.*) Canada to the Saskatchewan. (*Hooker, Fl.*)

665. HELEOCHARIS, R. Br. (SPIKE-RUSH)

(2466.) **H. Robbinsii,** Oakes.; Gray, Man. Ed. V., 557.

Kendrick's Lake; and Potter's Lake, near St. Stephen, N.B. (*Vroom.*)

(2467.) **H. obtusa,** Schultes.; Hook., Fl. II., 229.

Scirpus capitatus, Vahl.; Pursh, Fl. I., 55.
S. ovatus, Vahl.; Pursh, Fl. I., 54.

Rather uncommon but widely distributed. Common in Pictou Co., N.S. (*McKay.*) Ditches at Annapolis, N.S. and Whycocomagh, Cape Breton. (*Macoun.*) Muddy places; common, N.B. (*Fowler, Cat.*) Ditches, Campbellton, N. B. (*Macoun.*) Etchemin, Q. (*Hon. W. Shepperd.*) Muddy soil, Notre Dame de Levis, Q. (*St. Cyr.*) Nation River, at Casselman, and other places near Ottawa. (*Fletcher, Fl. Ott.*) Kemptville, Ont. (*Porter.*) Common in ditches at Prescott, Ont. (*Billings.*) Ditches and muddy places, rather common in central Ontario. (*Macoun.*) Vicinity of Hamilton, Ont. (*Buchan.*) Swamps at London, Ont., and Parry Sound, Georgian Bay. (*Burgess.*) North shore of Lake Superior. (*Agassiz.*) Pitt River, B. C. (*J. A. Hill.*) Saskatchewan River. (*Hooker, Fl.*)

(2468.) **H. palustris,** R. Br.; Hook., Fl. II., 228.

H. multicaulis, Hook., Fl. II., 228. (?)
Scirpus palustris, Vahl.; Pursh, Fl. I., 54.

Common in wet meadows and bogs from the Atlantic to the Pacific. Marshy places, Annapolis, and Truro, N.S.; Louisburg, Cape Breton. (*Macoun.*) Common both in the large form which grows in water, and the smaller form in wet meadows, N.B. (*Fowler, Cat.*) Campbellton, N.B.; Little Fox River, Gaspé, Q. (*Macoun.*) Ouatchechou, Q. (*St. Cyr.*) Water pools, on rocks, Huckleberry Rapids, Argenteuil Co., Q. (*D'Urban.*) Vicinity of Ottawa. (*Fletcher, Fl. Ott.*)

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Common in marshy places, Prescott, Ont. (*Billings.*) Kemptville, Ont. (*Porter.*) Abundant in marshy meadows and lake margins throughout central Ontario. (Both forms.) (*Macoun.*) Vicinity of Hamilton, Ont. (*Buchan.*) Swamps at London, Ont. (*Burgess. Millman.*) Parry Sound, Georgian Bay. (*Burgess.*) North shore of Lake Superior. (*Agassiz.*) Batch-ah-wah-nah Bay, Lake Superior; Michipicotin to Lake Missinaibi, Ont.; down the Nelson River to York Factory. (*R. Bell.*) Moose Factory, James Bay. (*Cottar & Dr. Hayden.*) Fort George, James Bay. (*J. M. Macoun.*) Sydenham River, Owen Sound, Ont.; abundant around Lake Superior and up the Nipigon River to Livingstone Point, on Lake Nipigon. (*Macoun.*) Wet prairie at Emerson, Man; Souris River, 49th parallel; and Kitaman River, Kootanie Valley, Rocky Mountains. (*Dawson.*) Rather common in wet spots on the prairie from Winnipeg westward, especially at the File Hills and Long Lake; not uncommon in the Rocky and Selkirk Mountains, and westward to the Pacific coast and Vancouver Island, where it is abundant. (*Macoun.*) Throughout Canada to Bear Lake, and from Hudson Bay to the Pacific Ocean; varying much in size, from four inches to two feet. (*Hooker, Fl.*) Greenland. (*Lange.*)

Var. **calva,** Torr. Bot. N. York, II., 346.
Blackwater River, Lake Nipigon, Ont. (*Macoun.*)

Var. **glaucescens,** Gray, Man. Ed. V., 558.
In marshes at the mouth of Nipigon River, Lake Superior. (*Macoun.*)

(2469.) **H. compressa,** Sullivant; Gray, Man. Ed. V., 558.
This species seems to be rare in Canada. In wet meadows at Belleville, Ont.; in great profusion, and evidently indigenous. (*Macoun.*) Barren field north of Fort Wellington, Prescott, Ont. (*Billings.*) Port Colborne, Lake Erie. (*McGill Coll. Herb.*)

(2470.) **H. rostellata,** Torr., Var. **occidentalis,** Watson. Bot. Calif. II., 222.
Scirpus rostellatus, Torr. Cyp., 318.
Abundant in marshes of the Somas River, at Alberni, west coast of Vancouver Island. The culms are usually rather weak, and often root at the tips, forming new plants which soon equal the parent in size. (*Macoun.*)

(2471.) **H. intermedia,** Schultes.; Torr. Cyp., 91.
Not uncommon in marshy spots along the Bay of Quinte, both above and below Belleville, Ont. (*Macoun.*)

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(2472.) **H. tenuis,** Schultes.; Torr. Cyp., 309.

Scirpus tenuis, Willd.; Torr. Fl. I., 44.

Not uncommon, growing in wet meadows and boggy places. On a wet boggy place at Truro, and North-west Arm, Halifax, N.S., and at North Sydney, and Louisburg, Cape Breton. (*Macoun.*) Halifax, N.S. (*Sommers.*) On a wet bank, Kouchibouguac; Tobique Lakes, Petitcodiac, and Hampton, N.B. (*Fowler, Cat.*) Salt Lake, Anticosti, and marshes at Grand Etang, Gaspé coast, Q. (*Macoun.*) Island of Orleans, Q. (*St. Cyr.*) Shores of Thunder Bay, and along the east coast of Lake Superior; east coast of Lake Nipigon. (*Macoun.*) Lake of the Woods. (*Burgess.*) Muskeg Creek, Lake Winnipeg. (*J. M. Macoun.*) Marshes along the base of Porcupine Mountain, Man.; Moose Jaw Creek, Assiniboia; along the Bow River, at Morley, and westward to Kananaskis Station, Rocky Mountains. (*Macoun.*)

(2473.) **H. acicularis,** R. Br.; Hook., Fl. II., 230.

Scirpus acicularis, Linn.; Pursh, Fl. I., 54.
S. capillaceus, Michx., Fl. I., 30.

Muddy places, not uncommon from the Atlantic to the Pacific. Ditches at Truro, N.S. (*Macoun.*) Louisburg, Cape Breton. (*Burgess.*) Muddy shores and ditches; common; Spurr's Cove, N.B. (*Fowler, Cat.*) Campbellton, N.B. (*Chalmers.*) Salt Lake, Anticosti; Ste. Anne des Monts River, Gaspé, Q. (*Macoun.*) Thunder Creek, Q. (*St. Cyr.*) St. John, Q. (*W. F. McCrea.*) Abundant on all muddy river banks at Ottawa. (*Fletcher, Fl. Ott.*) Common in ditches at Prescott, Ont. (*Billings.*) Kemptville, Ont. (*Porter.*) Very common in suitable places throughout central Ontario. (*Macoun.*) Vicinity of Hamilton, Ont. (*Buchan.*) Low ground, London, Ont. (*Burgess. Millman.*) Chicken Bay, Lake Huron; Sault Ste. Marie and east coast of Lake Superior. (*Macoun.*) North shore of Lake Superior. (*Agassiz.*) Lake of the Woods; and Red River prairie, Man. (*Dawson.*) Red Deer River, near the Hand Hills, and frequent on the margin of pools in the prairie region; not uncommon in boggy places at Victoria, Nanaimo, and Alberni, Vancouver Island. (*Macoun.*) Hudson Bay, Red River, and the Saskatchewan. (*Hooker, Fl.*)

(2474.) **H. pygmæa,** Torr. Cyp., 313.

Scirpus pusillus, Vahl.; Pursh, Fl. I., 54.

Brackish marshes along the sea-coast. Baddeck, Cape Breton. (*Macoun & Burgess.*) Sea-shore, Kent Co., N.B. (*Fowler, Cat.*) Saguenay River, Q. (*Burgess.*) Lower St. Lawrence. (*C. G. Pringle.*) Salt marshes at Alberni, west coast of Vancouver Island. (*Macoun.*)

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(2475.) **H. pauciflora,** Link.; Hook., Fl. II., 229.

Scirpus pauciflora, Lightf.; Gray, Man. Ed. V. 560; Macoun, Cat. No. 1930.
S. Bæothryon, Ehrh.; Hook., Fl. II., 229.

Not uncommon but easily overlooked; from the Atlantic westward to the Rocky Mountains. Salt Lake, Anticosti; Grand Etang and other places along the Gaspé coast, Q.; in wet sand at Presqu'ile Point, Wellington Beach, and Toronto Island, Lake Ontario. (*Macoun.*) Toronto, Ont. (*Burgess.*) East coast of Lake Nipigon; marshes at the base of Porcupine Mountain, Man.; in springs, Cypress Hills, Alberta; abundant on sand along Bow River, from Morley westward, and at Kicking Horse Lake, in the Rocky Mountains. (*Macoun.*) Muddy swamps and salt marshes in the Rocky Mountains. (*Hooker, Fl.*)

666. SCIRPUS, Linn. Gen. 67. (CLUB-RUSH.)

(2476.) **S. cæspitosus,** Linn.; Torr. Cyp., 319.

Eleocharis cæspitosa, Link.; Hook., Fl. II., 229.

Chiefly boreal and alpine in habit, but extending across the continent. Peat bog, Sydney Mine, Cape Breton. (*Macoun & Burgess.*) Richibucto and Lily Lake, N.B. (*Fowler, Cat.*) Peat bog, Salt Lake, Anticosti, (*Macoun.*) Summit of Mount Albert, Gaspé, Q. (*Macoun. Porter.*) Harbor Island, Mingan, Q. (*St. Cyr.*) Marsh at Chicken Bay, Lake Huron; abundant at Current River and north-east coast of Lake Superior; east coast of Lake Nipigon, Ont. (*Macoun.*) North shore of Lake Superior. (*Agassiz.*) York Factory, Hudson Bay; Ford's Harbor, coast of Labrador. (*R. Bell.*) Bogs along the base of the Porcupine Mountain, Man.; on boggy soil, from Morley westward through the Rocky and Selkirk Mountains; on the summit of Mount Arrowsmith, alt. 4,800 feet, Vancouver Island. (*Macoun.*) Throughout Canada to near the shores of the Arctic sea, and in swamps of the Rocky Mountains. (*Hooker, Fl.*) Ounalashka, and Sitka. (*Rothr. Alask.*) Greenland. (*Lange.*)

(2477.) **S. subterminalis,** Torr.; Hook., Fl. II., 229.

Floating and growing in mud at the bottom of shallow lakes. Petitcodiac, and Quaco, N.B. (*Fowler, Cat.*) St. Clair Flats, St. Clair River, Ont. (*J. M. Macoun.*) In water, Blackstone Lake, Muskoka Co., Ont. (*Burgess.*) Oba Lake, Ont. (*R. Bell.*) Gull Lake, Addington Co., and in Gull River, Victoria Co.; White River, north of Lake Superior; and in a small lake on Mount Mark, Vancouver Island, alt. 2,500 feet. (*Macoun.*) Deep standing pools in the Rocky Mountains, near the head waters of the Columbia. (*Hooker, Fl.*)

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(2478.) **S. pungens,** Vahl.; Gray, Man. Ed. V., 561.

S. triqueter, Michx., Fl. I., 47.
S. Americanus, Pers.; Pursh, Fl. I., 56.
S. mucronatus, Vahl.; Pursh, Fl. I., 55.

Not uncommon in salt marshes, and on the shores of the Great Lakes; extending from the Atlantic to the Pacific. Newfoundland. (*Reeks.*) Marshes at Sydney Mines, and Baddeck, Cape Breton. (*Macoun.*) Pictou, N.S. (*McKay.*) Common in salt or brackish marshes, New Brunswick. (*Fowler, Cat.*) Ouatechechou, Q. (*St. Cyr.*) Gravelly island in the St. Lawrence, opposite Montreal. (*W. F. McCrea.*) Along the Rideau River, at Ottawa. (*Fletcher, Fl. Ott.*) Bank of the St. Lawrence, three miles west of Prescott; banks of the Rideau River, near Ottawa. (*Billings.*) Hog Lake, North Hastings, Ont.; sands of Presqu'ile Point, Lake Ontario; River Trent, above Heely Falls, Northumberland Co., and on Britton's Island, Gull Lake, Victoria Co., Ont.; marsh at Chicken Bay, Lake Huron. (*Macoun.*) Sands of Toronto Island, Lake Ontario. (*Millman.*) Vicinity of Hamilton, Ont. (*Logie.*) Shallow water, Parry Sound, Georgian Bay. (*Burgess.*) Salt marshes at Brandon, and Calgary, N.W.T. (*Prof. Fowler.*) Borders of salt marshes, Old Wives Lakes, Cypress Hills, and throughout the prairie region generally; common in sandy marshes at Oak Bay, and along the coast of Vancouver Island to Comox; also in marshes at Alberni, on the west coast. (*Macoun.*) Fort Wrangel, Alaska. (*Meehan.*) Missinaibi River; marshes of the Saskatchewan and throughout the country to the Arctic regions. (*Hooker, Fl.*)

(2479.) **S. Nevadensis,** Watson, Bot. King's Exp. V., 360.

In alkaline marshes along the north end of Old Wives Lakes, and along some of the salt lakes north of the Cypress Hills. (*Macoun.*) Chinaman's Ranche, above Spence's Bridge, B.C. (*Fletcher.*)

(2480.) **S. lacustris,** Linn.; Hook., Fl. II., 229 (Great Club-Rush.)

S. validus, Vahl.; Pursh, Fl. I., 56; Gray, Man. Ed. V., 562; Macoun, Cat. No. 1927.

Common in still water of rivers, and in lakes and marshes from the Atlantic to the Pacific. Newfoundland. (*Reeks.*) Moser's Lake and Cow Bay, Halifax Co., N.S. (*Sommers, Cat.*) Annapolis, and Yarmouth N.S. (*Macoun.*) In still fresh water N.B.; common. (*Fowler, Cat.*) Campbellton, N.B. (*Chalmers.*) In marshes at Salt Lake, and Ellis Bay, Anticosti. (*Macoun.*) Vicinity of Ottawa; not common. (*Fletcher, Fl. Ott.*) Kemptville, Ont. (*Porter.*) Common around Prescott, Ont. (*Billings.*) St. Andrews, Q., and Port Colborne, Lake Erie. (*McGill Coll. Herb.*) Rivers, lakes and ponds, quite common in central and western Ontario.

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(*Macoun.*) Vicinity of Hamilton. (*Logie.*) In water at London, Ont. (*Burgess. Millman.*) North shore of Lake Superior. (*Agassiz.*) Lake Nipigon; and Kaministiqua River, Thunder Bay, Lake Superior. (*Macoun.*) Lake of the Woods, and Roseau River, Man. (*Burgess.*) Lake Mistassini, N.E.T.; "Grassy Narrows," Lake Winnipeg; Beren's River and down the Severn River, Keewatin. (*J. M. Macoun.*) Michipicotin River, Ont.; Nelson River, Keewatin. (*R. Bell.*) Moose Factory, James Bay. (*Cottar & Dr. Hayden.*) Winnipeg and North-west Angle Road; also Trader's Road, Man. (*Dawson.*) Occasionally in ponds, but particularly at Rush Lake, in the prairie region, extending north to the Peace River; Bow River, at the Kananaskis, Rocky Mountains, and in the Columbia Valley, between Golden City and Donald; not uncommon on the borders of lakes, Vancouver Island. (*Macoun.*) British America, as far north as lat. 57°; marshes of the Rocky Mountains. (*Hooker, Fl.*)

Var. **occidentalis,** Watson, Bot. Calif. II., 218.

Kootanie Valley, Rocky Mountains, 1883. (*Dawson.*)

(2481.) **S. maritimus,** Linn.; Hook., Fl. II., 230, (Sea Club-Rush.)

S. maritimus, β. macrostachyos, Michx., Fl. I., 32, in part.
S. robustus, Pursh, Fl. I., 56, in part.

Salt marshes on the coasts of the Atlantic and Pacific oceans, and borders of salt lakes in the prairie region. Salt marshes at Truro, and Yarmouth, N.S. (*Macoun.*) Common in salt marshes, N.B. (*Fowler, Cat.*) Salt Lake, Anticosti. (*Macoun.*) Saguenay River; Rivière du Loup, Q. (*Burgess.*) Saline lake near Turtle Mountain, Man. (*Dawson.*) Marshes at the File Hills, Man., and along Thunder Creek, and Old Wives Lakes, Assiniboia; very abundant in salt marshes at Qualicum, and Nanaimo; also at Alberni, on the west coast, Vancouver Island. (*Macoun.*) Salt marshes of the Saskatchewan. (*Hooker, Fl.*)

(2482.) **S. fluviatilis,** Gray. (River Club-Rush.)

S. maritimus, var. (?) *fluviatilis,* Torr. Bot. N. York, II., 354.
S. robustus, Pursh, Fl. I., 56, in part.

Rather uncommon in river and lake marshes. L'Ange Gardien, and Templeton; Pointe Aux Trembles, Hochelago Co., Q. (*Ami.*) Marsh along the Rideau River, at the railway bridge, Ottawa. (*Fletcher, Fl. Ott.*) River St. Lawrence, at Prescott. (*Billings.*) River Trent, at the terminus of the Marmora railway, and at the "Narrows" above that point; Gull River, above Cameron Lake, Victoria Co., Ont. (*Macoun.*) Vicinity of Hamilton, Ont. (*Logie.*) Swampy marsh, Kingston, Ont. (*Millman.*) Port Colborne, Lake Erie. (*McGill Coll. Herb.*) Shallow

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water, Point Pelée, Lake Erie. (*Burgess.*) Marsh, Lake Shebandewan, west of Lake Superior. (*Macoun.*)

(2483.) **S. rufus,** Wahl.; Hook. British Flora, 414.

Blysmus rufus, Link.

Salt marshes, chiefly around the Gulf of St. Lawrence. Marshy ground at the mouth of Eel River, Restigouche Co., N.B. (*Fowler, Cat.*) Abundant at Salt Lake, and Becscie River, Anticosti; very common in salt marshes at Cape Rosier, Gaspé, and at intervals along the coast to Matane, Q. (*Macoun.*) Shore of River St. Lawrence, Q. (*Pringle.*) Around salt springs, about a mile up Red Deer River, at the head of Lake Winnipegoosis, lat. 53°. (*Macoun.*)

(2484.) **S. sylvaticus,** Linn., var. **digynus,** Bœck.

S. microcarpus, Presl.; Gray, Man. Ed. V., 564; Macoun, Cat. No. 1931.
S. sylvaticus, Linn.; Hook., Fl. II., 230; Pursh, Fl. I., 56.
S. lenticularis, Torr. Cyp., 328; Hook., Fl. II., 230.

Not uncommon in flowing water from the Atlantic to the Pacific. Truro, and Annapolis, N.S. (*Macoun.*) Pictou, N.S. (*McKay.*) Common in Kent Co.; Campbellton, N.B. (*Fowler, Cat.*) Brooks, Gaspé Basin, Q. (*Macoun.*) Montreal, and St. Andrews, Q. (*McGill Coll. Herb.*) Nipigon House, Lake Nipigon, Ont. (*Macoun.*) Lake Mistassini, N.E.T. (*J. Richardson.*) Rupert House, James Bay. (*J. M. Macoun.*) Moose Factory, James Bay. (*Cottar & Dr. Hayden.*) Michipicotin River, Ont. (*R. Bell.*) Cut Arm Creek, Saskatchewan River, Athabasca River, Peace River, and Lake Athabasca, N.W.T. (*Macoun.*) Medicine Hat, Alberta. (*J. M. Macoun.*) Common in Beaver Creek Valley and in other valleys of the Selkirk Mountains; abundant at Victoria, Nanaimo, Qualicum, Alberni, and numerous other places, Vancouver Island. (*Macoun.*) Canada and Hudson Bay to lat. 57°, and to the headwaters of the Columbia, in the Rocky Mountains; Sitka. (*Hooker, Fl.*)

(2485.) **S. atrovirens,** Muhl. Gram. 43.

S. polyphyllus, Vahl.; Pursh, Fl. I., 57.
S. sylvaticus var. *atrovirens,* Gray, Man. Ed. II. (1856.)

Not uncommon in marshes. Watery places at Halifax, N.S. (*Macoun.*) Caledonia, Guysboro Co., N.S. (*Faribault*). Wet meadows and bogs, Norton, and Fredericton; Grand Manan, N.B. (*Fowler, Cat.*) Quebec, and River Mingan, Lower St. Lawrence. (*St. Cyr.*) Abundant on the sandy banks of the Rouge River, Argenteuil Co., Q. (*D'Urban.*) Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Common at Prescott, Ont. (*Billings.*) Low wet meadows and ditches, common in central Ontario.

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(*Macoun.*) Vicinity of Hamilton Ont. (*Logie.*) Swamps at London, Ont. (*Millman. Burgess.*) Point Edward, River St. Clair, Ont. (*J. M. Macoun.*) Fifteen miles up the Kaministiqua River, west of Lake Superior. (*Macoun.*) Sault Ste. Marie; Oxford Lake and Nelson River, Keewatin. (*R. Bell.*) Saskatchewan. *Hooker, Fl.*)

667. ERIOPHORUM, Linn. Gen. 68.

(2486.) **E. cyperinum,** Linn.; Benth. & Hook., Gen. Plant, III., 1052.

Scirpus Eriophorum, Michx., var. *cyperinus*, Gray, Man. Ed. V., 565; Macoun, Cat. No. 1925.

Trichophorum cyperinum, Pers.; Pursh, Fl. I., 57.

Rather common in ditches and swamps throughout eastern Canada. Newfoundland. (*Reeks.*) Whycocomagh, Cape Breton; and Truro, N.S. (*Macoun.*) Magdalen Islands. (*J. Richardson.*) Abundant at Pictou, N.S. (*McKay.*) Glenelg, Guysboro Co., N.S. (*Faribault.*) Campbellton, N.B. (*Macoun.*) Thunder River and St. Sauveur, Q. (*St. Cyr.*) Tadousac, Q. (*A. T. Drummond.*) In pools of water at Huckleberry Rapids, Argenteuil Co., Q. (*D'Urban.*) Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Kemptville, Ont. (*Porter.*) Common around Prescott, Ont. (*Billings.*) Very abundant in central Ontario. (*Macoun.*) Vicinity of Hamilton, Ont. (*Logie.*) Swamps, London, Ont. (*Burgess. Millman.*) Sault Ste. Marie; Echimamish River, Keewatin. (*R. Bell.*) Abundant at the mouth of the Kaministiqua River, at Fort William, Lake Superior. (*Macoun.*) Hudson Bay; Canada to the Saskatchewan. (*Hooker, Fl.*)

All the preceding notices are supposed to belong to *Scirpus Eriophorum*, Michx., var. *cyperinus*, Gray, which seems to be the common form.

Var. **laxus,** Gray, Man. Ed. V., 565.

Scirpus Eriophorum, Michx., var. *laxus*, Gray, Man. Ed. V., 565.

This is distinguished from all the other forms by its scattered heads, but more particularly by the long pedicelled lateral heads and sessile middle one. Along the Restigouche, near Campbellton, N.B.; wet meadows, Whycocomagh, Cape Breton; common at Belleville, Ont.; also Flat Rock Portage, Lake Nipigon, Ont. (*Macoun.*) Severn River, Keewatin. (*J. M. Macoun.*) Wet places, London, Ont. (*Burgess. Millman.*)

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(2487.) **E. lineatum,** Benth. & Hook., Gen. Plant., III., 1052.

Scirpus lineatus, Vahl.; Michx., Fl. I., 32; Pursh, Fl. I. 56; Gray, Man. Ed. V., 566.

Rare and apparently confined to south-western Ontario. Wet gravelly river flats, London, Ont. (*Burgess. Millman.*) Point Aux Pins, Lake Erie. (*Burgess.*) Low ground at the southern end of Pelée Point, Lake Erie. (*Macoun & Burgess.*)

(2488.) **E. alpinum,** Linn.; Hook., Fl. II., 230.

E. Hudsonianum, Michx., Fl. I., 34.
Trichophorum alpinum, Pursh, Fl. I., 57.

Peat bogs and cold swamps; common northward. Mahone Bay, Cape Breton. (*Sommers, Cat.*) Bog near Sydney Mine, Cape Breton. (*Macoun & Burgess.*) Aspy Bay, Cape Breton. (*McKay.*) Grand Falls of Nepisiquit, and near St. John; St. Francis, and Lily Lake; Andover, N.B. (*Fowler, Cat.*) Campbellton, N.B. (*Chalmers.*) Charlo, N.B. (*Fletcher.*) Salt Lake, and Ellis Bay, Anticosti; bogs along the Gaspé coast, and at Trois Pistoles, Q. (*Macoun.*) St. Charles Island, Mingan, Q. (*St. Cyr.*) North shore of Lake Superior. (*Agassiz.*) Beaver meadow, Hooper's Lake, Tudor, and tamarack swamps, Huntingdon, North Hastings; near, Otter Head, and south of Fort William, Lake Superior; White River, north of Lake Superior; and in bogs along Porcupine Mountain, Man. (*Macoun.*) Lake Mistassini, and Rupert River, N.E.T.; Severn River, Keewatin; Charlton Island, and Fort George, James Bay. (*J. M. Macoun.*) From Hudson Bay to Lake Mistassini. (*Hooker, Fl.*) Common in marshes in Beaver Creek Valley, Selkirk Mountains. (*Macoun.*)

(2489.) **E. vaginatum,** Linn.; Hook., Fl. II., 231, (Hares-tail.)

E. cæspitosum, Host.; Pursh, Fl. I., 5.

Peat bogs and swamps from the Atlantic to the Pacific. Newfoundland. (*Reeks.*) Halifax, Truro, and Mahone Bay, Lunenburg Co., N.S. (*Sommers, Cat.*) Truro, N.S.; and North Sydney, and Louisburg, Cape Breton. (*Macoun.*) Magdalen Islands. (*J. Richardson.*) Halifax, N.S. (*Burgess.*) Common in Pictou Co., N.S. (*McKay.*) Common in peat bogs, Kent, and Carleton Co's.; Lancaster, N.B. (*Fowler, Cat.*) Salt Lake, Jupiter River, and Ellis Bay, Anticosti; and in bogs along the Gaspé coast, Q. (*Macoun.*) Grand Island, Mingan, Q. (*St. Cyr.*) Boggy soil, Island of Montreal. (*W. F. McCrea.*) Mer Bleue, near Ottawa. (*Fletcher, Fl. Ott.*) Bog near Kemptville, Ont. *Porter.*) Cedar swamps and bogs, North Hastings, Ont.; in a swamp five miles north of Colborne, Ont. (*Macoun.*) Mossy bog, near London, Ont.

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(*Burgess. Millman.*) Lake Mistassini, N.E.T.; Beren's River, and Severn River, Keewatin. (*J. M. Macoun.*) Bogs, Lake Nipigon, Ont.; Porcupine Mountain, Man.; abundant in swamps along the Bow River, and frequent in marshes, Rocky Mountains; east of Stewart's Lake, Northern British Columbia. (*Macoun.*) Canada to Fort Enterprise. (*Hooker, Fl.*) Sitka. (*Rothr. Alask.*) Cumberland Islands. (*Parry.*) Banff, Rocky Mountains. (*Prof. Fowler.*) Greenland. (*Lange.*)

(2490.) **E. russeolum,** Fries.

E. vaginatum, var. γ., Hook., Fl. II., 231.

Rather uncommon in bogs eastward. Newfoundland. (*Reeks.*) Coast of Labrador. (*Butler.*) Magdalen Islands. (*McKay.*) Bog, Straits of Canso, N.S. (*Macoun.*) Bog, near Richibucto; Cape Bald, Port Elgin, Hillsborough, Cape Enrage; Chipman, N. B. (*Fowler, Cat.*) Bog, Salt Lake, Anticosti; summit of Mount Albert, Gaspé, Q. (*Macoun.*) Ouatchechou, Q. (*St. Cyr.*) Table Top Mountain, Gaspé, Q. (*Porter.*)

(2491.) **E. capitatum,** Host.; Hook., Fl. II., 231.

E. Scheuchzeri, Hoppe.; Rothr. Alask., 457.
E. Chamissonis, C. A. Meyer; Rothr. Alask., 457.

Peat bogs and river margins, chiefly westward. Newfoundland. (*Cormack.*) Labrador. (*Butler.*) Moose Factory, James Bay. (*Cottar & Dr. Hayden.*) Hudson Bay, lat. 56°. (*J. M. Macoun.*) Bogs, Porcupine Mountain, Man.; common along the Bow River, at Castle Mt. and bordering the marshes along the Columbia, between Golden City and Donald; in marshes along Beaver Creek, Selkirk Mountains, B.C.; Stewart's Lake, B.C. (*Macoun.*) Vancouver city, Burrard Inlet, B.C. (*Prof. Fowler.*) Island Lake, B.C. (*Hill.*) Lost Lake, Cedar Hill, near Victoria, and Westwood's swamp, near Nanaimo, Vancouver Island. (*Macoun.*) Swamps on Mount Finlayson, Vancouver Island. (*Fletcher.*) Kotzebue Sound, Sitka and Ounalashka. (*Rothr. Alask.*) Fort Churchill, and northward to Repulse Bay and Cape Lady Pelly. (*Dr. Rae.*) Point Barrow. (*John Murdoch.*) Cumberland Island. (*Parry.*) From Quebec to the swamps on the summits of the Rocky Mountains, and to the Arctic coasts and islands. (*Hooker, Fl.*) Port Kennedy, lat. 72°. (*Dr. Walker.*) Greenland. (*Lange.*)

Var. β., Hook., Fl. II., 231.

E. callitrix, Cham.; Rothr. Alask., 457.

Island of St. Lawrence. (*Rothr. Alask.*) The leaves in this variety are scabrous.

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(2492.) **E. Virginicum,** Linn.; Michx., Fl. I., 34; Pursh, Fl. I., 58; Hook., Fl. II., 231.

Not uncommon in bogs eastward. Newfoundland. (*Reeks.*) Brigus, Newfoundland. (*R. Bell.*) Magdalen Islands. (*J. Richardson.*) Pictou, and Guysboro Co., N.S. (*McKay.*) Pictou, N.S. (*Burgess.*) Caledonia, Guysboro Co., N.S. (*Faribault.*) Common in bogs in northern counties; Lily Lake, N.B. (*Fowler, Cat.*) Ouatchechou; Valcartier, Q. (*St. Cyr.*) Boggy margins of small lakes, Argenteuil Co., Q. (*D'Urban.*) Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Kemptville, Ont. (*Porter.*) Marsh west of Prescott Junction, Ont. (*Billings.*) Tamarack swamps, Hastings Road, and Marmora, Hastings Co. Ont.; swamp, five miles north of Colborne, Ont. (*Macoun.*) Millgrove, near Hamilton, Ont. (*Logie.*) London, Ont.; and Parry Sound, Georgian Bay. (*Burgess.*) Oba Lake, Ont. (*R. Bell.*) North shore of Lake Superior. (*Agassiz.*) Mer Bleue, Ottawa; Port Colborne, Lake Erie. (*McGill Coll. Herb.*) Canada to the Saskatchewan. (*Hooker, Fl.*)

Var. **album,** Gray, Man. Ed. V., 566.

Wool quite white, heads much smaller. In a bog near the town of North Sydney, Cape Breton. (*Macoun.*)

(2493.) **E. polystachyon,** Linn.; Pursh, Fl. I., 58; Hook., Fl. II., 231.

E. polystachyon, β., Michx., Fl. I., 34.
E. polystachyon, L., var. *latifolium*, Gray, Man. Ed. V., 566.

Very common in marshes and bogs, under various forms, from the Atlantic to the Pacific. Newfoundland. (*Reeks.*) Magdalen Islands. (*J. Richardson.*) Aspy Bay, Cape Breton; and Magdalen Islands. (*McKay.*) Caledonia, Guysboro Co., N.S. (*Faribault.*) Common in bogs throughout New Brunswick. (*Fowler Cat.*) Bake Apple Bog, North Sydney, Cape Breton; and Truro, N.S. (*Macoun.*) Hunting Island, Mingan; Ouatchechou, and St. Sauveur, Q. (*St. Cyr.*) Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Jessup's Swamp and common northward, from Prescott, Ont. (*Billings.*) The Dell, Ancaster, near London, Ont. (*Logie.*) London, Ont.; Lake of the Woods, and Rosseau River, Man. (*Burgess.*) Swamp near Turtle Mountain, Man. (*Millman.*) Between Badger Creek and Turtle Mountain, Man. (*Dawson.*) Moose Mountain Creek, Man. (*J. M. Macoun.*) Abundant at Flat, and Gopher creeks, Man.; swamps, Bear Hills, Alberta; rather common from Morley westward through the Rocky and Selkirk mountains, B.C.; on the summit of Mount Arrowsmith, and along the shores of Horne Lake, near Qualicum, Vancouver Island. (*Macoun.*) Norton Sound to Point

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Barrow and the Arctic coast. (*Rothr. Alask.*) Canada to the Rocky Mountains, and to the Arctic sea-shore and islands. (*Hooker, Fl.*) Between Fort Churchill and York Factory. (*Dr. Rae.*) Port Kennedy, lat. 72°. (*Dr. Walker.*) Nottingham, and Digge's islands, Hudson Strait. (*R. Bell.*)

Var. **angustifolium,** Gray, Man. Ed. V., 566.

E. angustifolium, Roth.; Pursh, Fl. I., 58; Hook., Fl. II., 231.

Doubtless many of the references under var. *latifolium* belong here, but we had no means of determining, and so placed them all under the general head. Campbellton, N.B. (*Chalmers.*) North Sydney, Cape Breton, and Yarmouth, N.S.; marshes, Mount Albert, Gaspé, Q.; bogs, Salt Lake, Anticosti; peaty swamps, near Belleville, Ont.; Red Rock, Lake Superior. (*Macoun.*) Kemptville, Ont. (*Porter.*) Greenland. (*Lange.*)

(2494.) **E. gracile,** Koch.; Hook., Fl. II., 231.

E. angustifolium, Torr. Bot. N. York, II., 359.

Peat and other bogs, common eastward. Newfoundland. (*Cormack.*) Bogs, Windsor, and Halifax, N.S. (*Sommers, Cat.*) Goldenville, Guysboro Co., N.S. (*Faribault.*) Dartmouth, N.S. (*McGill Coll. Herb.*) Rather common at Bass River; Lancaster, N.B. (*Fowler, Cat.*) Dow's swamp and other places, Ottawa; uncommon. (*Fletcher, Fl. Ott.*) Dr. Jessup's swamp and northward from Prescott, Ont. (*Billings.*) Loboro Lake, Ont. (*Prof. Fowler.*) Swamp, a little east of Belleville, Ont.; Big Swamp, Murray, and in marshy meadows near Trenton, Northumberland Co.; Chicken Bay, shore of Lake Huron, and marshy spots, Point Aux Pins, Lake Superior. (*Macoun.*) Churchill River, and York Factory, Hudson Bay. Cape Chudleigh, Hudson Strait. (*R. Bell.*) Saskatchewan to the Arctic sea. (*Hooker, Fl.*) Fort Wrangel, Alaska. (*Meehan.*)

Var. **paucinervium,** Engelm.; Gray, Man. Ed. V., 566.

Mossy bog near London, Ont. (*Millman. Burgess.*)

668. RHYNCHOSPORA, Vahl. (BEAK-RUSH.)

(2495.) **R. fusca,** Rœm. & Schultes, Syst. II., 81.

R. alba, β., fusca, Pursh, Fl. I., 49.

Schœnus fuscus, Linn., Sp. II., 1664.

Peat bogs and beaver meadows. Peat bogs, North Sydney, Cape Breton. (*Macoun & Burgess.*) Near Hampton, N.B. (*Fowler, Cat.*)

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Hampstead; Trout Lake, Charlotte Co., N.B. (*Brittain.*) Beaver meadow, Hooper's Lake, North Hastings, Ont. (*Macoun.*) Lake Joseph, Muskoka Co., Ont. (*Burgess.*)

(2496.) **R. alba,** Vahl.; Hook., Fl. II., 233; Pursh, Fl. I., 49.
Schœnus albus, Linn.; Michx., Fl. I., 5.

Peat bogs and beaver meadows, extending from the Atlantic to the Pacific. Newfoundland. (*Reeks.*) North West Arm, Halifax, N.S. (*Sommers, Cat.*) Liscomb River, Guysboro Co., N.S. (*Faribault.*) Wet bogs near Sydney, Cape Breton. (*Macoun.*) Peat bogs, near Richibucto; border of Clifton Lake, N.B. (*Fowler, Cat.*) Charlotte Co., N.B. (*Vroom.*) Hampton, N.B. (*Brittain.*) Mer Bleue, Ont., and Lake Flora, Hull, Q. (*Fletcher, Fl. Ott.*) Salt Lake, and Ellis Bay, Anticosti; Beaver meadow, Hooper's Lake, and rear of Samuel Baker's Farm, Huntingdon, North Hastings; Big Swamp, Murray, Northumberland Co.; border of South Lake, Snowden, Victoria Co., Ont.; marsh at Chicken Bay, Lake Huron. (*Macoun.*) Mossy bog, London, Ont., Parry Sound, Georgian Bay. (*Burgess.*) Shore of Horne Lake, near Qualicum, and at Sproat Lake, Alberni, Vancouver Island. (*Macoun.*) Sitka. (*Rothr. Alask.*)

(2497.) **R. capillacea,** Torr., Fl. I., 55.
Schœnus setaceus, Muhl. Gram., 6.

Beaver meadows, Hooper's Lake, and northward along the Hastings Road, Tudor, Hastings Co.; abundant in grassy places, Presqu'ile Point, Lake Ontario, and in a marsh at Owen Sound, Ont. (*Macoun.*) Niagara Falls, and London, Ont. (*Burgess.*)

(2498.) **R. glomerata,** Vahl.; Pursh, Fl. I., 48; Hook., Fl. II., 233.
Schœnus glomeratus, Linn.; Muhl. Gram. 8.
S. capitellatus, Michx., Fl. I., 36.

Beaver meadow, Hooper's Lake, Hastings Road, and beaver meadow in rear of Samuel Baker's Farm, Huntingdon, Hastings Co., Ont. (*Macoun.*) Moon River, Muskoka Co.; and Parry Sound, Ont. (*Burgess.*)

669. CLADIUM, R. Br., Hist. Jam., 114. (TWIG-RUSH.)

(2499.) **C. mariscoides,** Torr. Cyp., 372.
Schœnus mariscoides, Muhl.; Torr., Fl. I., 54.

Not very common, but occasionally met with in marshes. Marsh,

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North Sydney, Cape Breton. (*Macoun & Burgess.*) Upper Stewiacke, N.S. (*McGill Coll. Herb.*) Potter's Lake, near St. Stephen, N.B. (*Vroom.*) Grassy points, running into Brighton Harbor, on the north side of Presqu'ile Point, Lake Ontario; swamp in Killadar, Addington Co.; on a mud flat at the junction of the Peterson and Bobcaygeon roads, Victoria Co.; marshes, Point Edward, St. Clair River, Ont. (*Macoun.*) Blackstone Lake, and Port Cockburn, Muskoka Co., Ont. (*Burgess.*)

670. SCLERIA, Berg. (NUT-RUSH.)

(2500.) **S. triglomerata,** Michx., Fl. II., 168; Pursh, Fl. I., 46.

In a sandy thicket, near London, Ont.; very rare. (*Burgess.*)

(2501.) **S. verticillata,** Muhl.; Pursh, Fl. I., 45.

Hypoporum verticillatum, Nees.; Torr. Cyp., 384.

Very abundant on grassy points running into the marshes bordering Presqu'ile Point, Lake Ontario, 1865. (*Macoun.*)

671. KOBRESIA, Willd. Spec. Pl. IV., 205.

(2502.) **K. scirpina,** Willd.; Rich. App., Ed. II., 34.

Elyna spicata, Schrad.; Hook., Fl. II., 228.

On the summits of the Rocky Mountains, around Kicking Horse Lake. (*Macoun.*) Shady places on the Rocky Mountains; barren grounds, between lat. 64° and the Arctic Sea. (*Hooker, Fl.*) Greenland. (*Lange.*) Arctic coast. (*Rothr. Alask.*)

(2503.) **K. caricina,** Willd.

Elyna caricina, Mert. & Koch.; Hook., Fl. II., 228.

On the summits of the Rocky Mountains, at Castle Mt. and Kicking Horse Lake. (*Macoun.*) Dry banks of the Rocky Mountains. (*Hooker, Fl.*) Greenland. (*Lange.*)

672. CAREX, Linn. Gen. 1046. (SEDGE.)

I. *Spike solitary and simple. Terminal and androgynous. Colored.* * Bracts scale-like.

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Stigmas II.

(2504.) **C. nardina,** Fries. Mant. II., 55 (1835.)

C. Hepburnii, Boott, Hook., Fl. II., 209 (1840.)

On mountain summits, and in the arctic regions. Nottingham Island, off Cape Wolstenholme, Hudson Strait. (*R. Bell.*) "The Twins," James Bay. (*J. M. Macoun.*) Eastern summit of North Kootanie Pass, Rocky Mountains. (*Dawson.*) On the more elevated summits of the Rocky Mountains, from Castle Mountain westward to Mount Stephen; summit of Stewart's Lake Mountain, B.C. (*Macoun.*) Rocky Mountains. (*Hooker, Fl.*) Greenland. (*Lange.*)

(2505.) **C. capitata,** Linn. Sp. Pl. Ed. II., 1381; Hook., Fl. II., 208.

Hudson Bay, and Rocky Mounntains. (*Hooker, Fl.*) Greenland (*Lange.*) We have no Canadian specimens of this species.

(2506.) **C. filifolia,** Nuttall, Gen. N. Am. Pl. II., 204 (1818); Hook., Fl. II., 208.

Uncinia breviseta, Torr. Cyp., 428, (1836.)
Kobresia globularis, Dew. Sill. Journ. XXIX., 253, (1836.)

Dry gravelly soil, Qu'Appelle Valley, near Fort Ellice,; abundant on hillsides at Morley, and in the foothills of the Rocky Mountains. (*Macoun.*) Carleton House, on the Saskatchewan; also in the Rocky Mountains. (*Hooker, Fl.*)

(2507.) **C. dioica,** Linn. Sp. Pl., 972.

Along the River St. Lawrence, at Grand Metis, Q. (*Pringle.*) There is much doubt regarding Pringle's specimens, as Prof. Bailey does not include this species in his catalogue of North American Carices. I have not seen Pringle's specimens.

(2508.) **C. gynocrates,** Wormsk. in Herb. Hornm.

C. dioica, Schweinitz & Torrey, Mon. (1824); Hook., Fl. II., 208.
C. dioica, Linn., var. *Davalliana,* Dew. Sill. Journ. X., 283, (1826.)
C. Redowskiana, C. A. Meyer, Cyp. Nov. t. 4, (1830.)
C. monosperma, Macoun, in Herb.; Bailey Carex. Cat. (1882.)
C. nigricans, Dew. Sill. Journ. XXIX., 249, (1836.)

Cedar and other swamps throughout the country. Restigouche Co.; Arthurette, N.B. (*Fowler, Cat.*) Belledune, N.B. (*Chalmers.*) Bogs, Salt Lake, Anticosti. (*Macoun.*) Dow's Swamp and other localities, Ottawa. (*Fletcher, Fl. Ott.*) Swamp near Belleville, and in bogs, North Hastings; also Big Swamp, Murray, Northumberland Co., Ont. (*Macoun.*) Swamp at Saugeen, Ont. (*Burgess.*) Abundant in swamps

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around Lake Superior, and at Red Rock, Nipigon River; swamps along the Red Deer River, at the head of Lake Winnipegoosis, lat. 53°; common in bogs and swamps from Morley westward through the Rocky and Selkirk mountains, B.C. (*Macoun.*) Carleton House, on Saskatchewan, to the Arctic sea; also Rocky Mountains. (*Hooker, Fl.*) Greenland. (*Lange.*) Churchill River, and York Factory, Hudson Bay. (*R. Bell. Dr. Rae.*)

Stigmas III.

(2509.) **C. leiocarpa,** C. A. Meyer, Cyp. Nov. 208, t. 5, (1830); Hook., Fl. II., 208.

C. anthoxantha, Presl. Reliq. Haenk, 203, *vide* Bœckeler; Hook., Fl. II., 209.

Near the glacier on the Stikine River. (*Cowley.*) Sitka and Ounalashka. (*Rothr. Alask.*)

(2510.) **C. circinata,** C. A. Meyer, Cyp. Nov. 209, t. 6, (1830); Hook., Fl. II., 209.

Sitka. (*Barclay.*) Sitka, and Ounalashka. (*Rothr. Alask.*) Our specimens were collected by Barclay.

(2511.) **C. Lyoni,** Boott, Hook., Fl. II., 209.

Rocky Mountains. (*Hooker, Fl.*) According to Drummond, who collected in the Rocky Mountains, between the Athabasca and lat. 55°. Since his time no collections have been made in that region.

(2512.) **C. nigricans,** C. A. Meyer, Cyp. Nov. 210, t. 7, (1830); Hook., Fl. II., 210.

C. Pyrenaica, Torr. Cyp., 403, (1836.)

Western summit of North Kootanie Pass, Rocky Mountains. (*Dawson.*) Very common on the summits of the higher Rocky Mountains, from Castle Mt. westward to the Selkirk Mountains, B.C.; Mount Arrowsmith, Vancouver Island, alt. 5,600 feet. (*Macoun.*) Sitka, and Ounalashka. (*Rothr. Alask.*) Rocky Mountains. (*Hooker, Fl.*)

(2513.) **C. Pyrenaica,** Wahl. Köngl. Acad. Handl. XXIV., 139, (1802.)

C. micropoda, C. A. Meyer, Cyp. Nov. 210, t. 6, (1830); Hook., Fl. II., 209.
C. nigricans, Torr. Cyp., 402, (1836.)
C. Davalliana, Dew. Sill. Journ. XXVIII., 271, (1835.)

Abundant on the summits of the high mountains at Roger's Pass, Selkirk Mountains, B.C.; Mount Arrowsmith, Vancouver Island, alt. 5,500 feet. (*Macoun.*) Ounalashka. (*Rothr. Alask.*)

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(2514.) **C. exilis,** Dew. Sill. Journ. XIV., 351, (1828.)

Peat bogs and tamarack swamps. Newfoundland. (*La Pylaie.*) Peat bog at the head of the North-west Arm, Halifax, N.S.; bogs, Salt Lake, Anticosti. (*Macoun.*) Lakeville; Trout Lake, near St. George, N.B. (*Brittain.*) Mer Bleue, near Ottawa. (*Fletcher, Fl. Ott.*)

(2515.) **C. pauciflora,** Lightf. Fl. Scot., 543, t. 6, (1777); Hooker, Fl. II., 210.

C. leucoglochin, Dew. Sill. Journ. X., 42, (1826.)

Peat bogs, and cedar and other swamps, from the Atlantic to the Pacific. Newfoundland. (*Reeks.*) Wet boggy ground at the head of the North West Arm, Halifax, N.S. (*Macoun & Burgess.*) Bog near St. John; mouth of the Madawaska; and Chipman, N.B. (*Fowler, Cat.*) In bogs, Salt Lake, and Ellis Bay, Anticosti; summit of Mount Albert, Shickshock Mountains, Gaspé, Q. (*Macoun.*) Swamps at Ouatchechou, Q. (*St. Cyr.*) Abundant in a swamp Kennebec, Addington Co., Ont. (*Macoun.*) Border of a peat swamp at London, Ont. (*Burgess. Millman.*) Swamp, One-mile Portage, Nipigon River. (*Macoun.*) Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Border of Langford Lake, Goldstream, Vancouver Island. (*Macoun.*) Rocky Mountains. (*Hooker, Fl.*) Sitka. (*Rothr. Alask.*)

(2516.) **C. microglochin,** Wahl. Köngl. Acad. Handl. XXIV., 140, (1802); Hook. Fl. II., 210.

Boggy ground, North Twin Island, James Bay, 1887. (*J. M. Macoun.*) Common in boggy places and along rivers and small streams, from Morley westward through the Rocky Mountains to Donald in the Columbia Valley, 1885. (*Macoun.*) Easily distinguished from *C. pauciflora,* by "a conspicuous projecting racheola" which takes the place of the stiff persistent style in that species.

(2517.) **C. polytricholdes,** Muhl. in Willd. (1802); Pursh, Fl. I., 39; Hook., Fl. II., 209.

C. leptalea, Wahl. Köngl. Acad. Handl. XXIV., 139, (1803.)
C. microstachya, Michx., Fl. II., 169, (1803.)

Swamps and bogs throughout Canada from the Atlantic to the Pacific. Newfoundland. (*Reeks.*) In a swamp at Truro, N.S. (*Macoun.*) Rather common at Bass River; Spurr's Cove, N.B. (*Fowler, Cat.*) Becscie River, Anticosti; Cape Rosier, and near Point Fame, Gaspé coast. (*Macoun.*) Beaumont swamps, and Mingan, Q. (*St. Cyr.*) Swamps at Ottawa. (*Fletcher, Fl. Ott.*) Kemptville, Ont. (*Porter.*) Abundant in black ash, elm, and cedar swamps throughout central Ontario.

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(*Macoun.*) Low grounds around Prescott, Ont. (*Billings.*) Vicinity of Hamilton, Ont. (*Logie.*) Swamps, London, Ont. (*Burgess. Millman.*) Owen Sound, Ont.; common around Lake Superior and up the Nipigon River; swamps at Port Arthur, and westward through the forest country and prairie to Brandon, Man. (*Macoun.*) Michipicotin River, Ont. (*R. Bell.*) Lake Mistassini, N.E.T. (*J. M. Macoun.*) Common in swamps and bogs from Morley westward through the Rocky Mountains, to the summit of the Selkirk Mountains, B.C.; boggy places at Nanaimo and on Mount Mark, Vancouver Island. (*Macoun.*) Swamp near Victoria, Vancouver Island. (*Fletcher.*) Hudson Bay to Norway House, north of Lake Winnipeg. (*Hooker, Fl.*)

(2518.) **C. scirpoidea,** Michx., Fl. I., 171, (1803); Pursh, Fl. I., 34; Hook., Fl. II., 208.

C. Michauxii, Schwein. An. Tab. I., 64, (1823.)
C. Wormskioldiana, Schwein. & Torr. I., 294, (1824.)
C. scirpina, Tuckerman, Enum. Meth. 8, (1843.)

Cold boggy places or mountain summits. Summit of Mount Albert, Shickshock Mountains, Gaspé, Q. (*Porter.*) Bog at Sydney Mine, Cape Breton; Salt Lake, and Jupiter River, Anticosti; Red, and Chicken bays, Lake Huron, Ont. (*Macoun.*) Swamp between Badger Creek and Turtle Mountain, Man. (*Dawson. Burgess.*) Severn Lake, Keewatin; Souris Plain, Man. (*J. M. Macoun.*) Griswold, Man. (*Burman.*) Not uncommon on the prairies, from Brandon north-westward to Edmonton; abundant in boggy meadows, from Morley westward through the Rocky, and Selkirk mountains, B.C.; summit of Mount Arrowsmith, alt. 5,500 feet, Vancouver Island. (*Macoun.*) Fort Norman, Mackenzie River; Rocky Mountains. (*Hooker, Fl.*) Arctic sea-coast. (*Richardson.*) Greenland. (*Lange.*)

(2519.) **C. obtusata,** Liljeblad, Köngl. Acad. Handl. (1793); Hook., Fl. II., 209.

C. affinis, R. Br. Rich. App. Frankl. Narr., 763, (1823); Hook., Fl. II., 209.
C. Backiana, Dew. Sill. Journ. XXIX., 250, (1836.)
C. obesa, var. *monostachya,* Bœckeler, Linnæa XLI., 185.

Abundant in the prairie region on gravelly slopes, and amongst the foot-hills. Newfoundland. (*Reeks.*) Near Moose Mountain Creek, Souris Plain, Assiniboia. (*J. M. Macoun.*) Fort Qu'Appelle, Assiniboia. (*Fletcher.*) Quite common on dry slopes, from Portage la Prairie westward to the Rocky Mountains, and northward throughout the Saskatchewan region; on dry gravelly slopes in the foot-hills at Morley, and westward to Canmore, in the Rocky Mountains; Bridge

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Creek, Fraser River, B.C. (*Macoun.*) Carleton House, Saskatchewan River and wooded country northward; Rocky Mountains. (*Hooker, Fl.*)

(2520.) **C. rupestris,** Allioni, Fl. Ped. II., 264, t. 92, (1823.)

C. attenuata, R. Brown, Rich. App. Frankl. Voy., 763, (1823.)
C. Drummondiana, Dew. Journ. XXIX., 251, (1836.)
C. rupestris, var. *Drummondiana*, Bailey, Carex, Cat. (1884.)

Border of the first mountain gorge west from Kananaskis Station, Rocky Mountains. (*Macoun.*) Fort Norman, Mackenzie River; Rocky Mountains. (*Hooker, Fl.*)

(2521.) **C. ursina,** Dew. Sill. Journ. XXVII., 240, (1835.)

C. glareosa, var. *cæspitosa*, Bœck.; Bailey, Carex, Syn. No. 212, (1886.)
C. glareosa, var. *ursina*, Bailey, Carex. Cat. (1884.)

Arctic sea-coast. (*Hooker, Fl.*) Greenland. (*Lange.*)

* * *Bracts foliaceous. Green.*

(2522.) **C. Backii,** Boott, Hook., Fl. II., 210, (1840.)

C. Willdenovii, Gray, Gram. & Cyp. II., No. 169, in part.

Not uncommon on dry, grassy and rocky places; in open woods and thickets. Newfoundland. (*Reeks.*) Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Miriwin's Woods, near Prescott, Ont. (*Billings.*) Port Colborne, Ont. (*McGill Coll. Herb.*) Carleton Place, Ont.; dry ground at Belleville and Shannonville, Hastings Co.; Bald Island, Balsam Lake, Victoria Co.; Nipigon River, north of Lake Superior; Portage la Prairie, and thickets near Brandon, and Rapid City, Man.; valley of the Fraser River, at Boston Bar, B.C. (*Macoun.*) On the Saskatchewan River, at Cumberland House and Fort Carleton; Lake Winnipeg and Rocky Mountains. (*Hooker, Fl.*)

(2523.) **C. Willdenovii,** Schk. (1806); Pursh, Fl. I., 39, (1814.)

On a sandy island in the Lake of the Woods, near the mouth of Rainy River, 1872. (*Macoun.*)

(2524.) **C. Steudelii,** Kunth. Enum. Pl. II., 480, (1837.)

C. Willdenovii, var. Muhl. Gram. 230, (1817.)

On banks along Lake Erie, at Port Stanley; chiefly on clay bluffs west of the railway terminus, 1882. (*Macoun.*)

(2525.) **C. Geyeri,** Boott, Linn. Trans. XX., 18, (1846.)

Western summit of North Kootanie Pass Rocky Mountains, 1883. (*Dawson.*)

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II. *Spike composed of sessile and androgynous, or rarely diœcious spikelets.*

Stigmas II.

* *Spikes diœcious, or the spikelets androgynous with the male and female flowers irregularly intermixed.*

(2526.) **C. bromoides,** Schk. (1802); Pursh, Fl. I., 35, (1814); Hook., Fl. II., 212.

Swamps and wet grassy places; rather rare. Marsh near Truro, N.S. (*Macoun.*) Pollet River and Portage, Petitcodiac; Arthurette, and Salmon River, N.B. (*Fowler, Cat.*) Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Common in swamps at Prescott, Ont. (*Billings.*) Piece of damp woods east of Belleville, Ont. (*Macoun.*) Swamps near Hamilton, Ont. (*Logie.*) Bogs and swamps at London, and Parry Sound, Ont. (*Burgess.*) British America; Rocky Mountains. (*Hooker, Fl.*)

(2527.) **C. siccata,** Dew. Sill. Journ. X., 278, (1826): Hook., Fl. II., 212.

C. pallida, C. A. Meyer, Cyp. Nov. No. 21, (1830.)

Dry gravelly, or sandy soil, having a wide range to the north-westward. Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Grand Trunk gravel pit, near Prescott, and woodlands west of Brockville, Ont. (*Billings.*) Dry thickets east and west of Belleville, Ont.; Rice Lake Plains, and sandy ground generally throughout central Ontario. (*Macoun.*) Vicinity of London, Ont.; Lake of the Woods, and Emerson, Man. (*Burgess.*) Red River prairie, lat. 49°. (*Dawson.*) Stony Mountain, Man. (*Prof. Fowler.*) East coast of Lake Nipigon, and at the Pic and Michipicotin rivers, Lake Superior; Point Meuron, and Kakabeka Falls, Kaministiqua River; very abundant in many parts of the prairie region, especially on gravelly slopes; common on dry hill-sides, at Morley and westward to Canmore in the Rocky Mountains; abundant around Cache Creek, and on the dry slopes near Spence's Bridge, B.C. (*Macoun.*) Methy Portage and Saskatchewan River. (*Richardson.*) Pelly River, lat. 63°. N.W.T. (*Dawson.*) Cumberland House, Saskatchewan River; Lake Winnipeg and Rocky Mountains. (*Hooker, Fl.*)

(2528.) **C. disticha,** Hudson, Fl. Angl., 403, (1762.)

C. intermedia, Good. Linn. Trans. II., 154, (1792); Hook., Fl. II., 212.
C. Sartwellii, Dew. Sill. Journ. XLIII., 90, (1842.)

Marshes and margins of bogs, rather local. Newfoundland. (*Reeks.*) River side, Kemptville, Ont. (*Porter.*) Ditch along the G. T. Railway, between the wooden bridges, Belleville; also on Bleecker's Farm, west of the college, and on Ferry Point, south of Belleville Ont.; abundant

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in marshes, from Winnipeg westward and northward to the Rocky Mountains; rather common in marshes and on the borders of ponds at Morley and westward to Canmore, within the Rocky Mountains. (*Macoun.*) Fort Carleton, on the Saskatchewan River. (*Hooker, Fl.*)

(2529.) **C. Douglasii,** Boott, Hook., Fl. II., 213, (1840.)

C. Nuttallii, Dew. Sill. Journ. XLIII., 92, (1842.)
C. Meekii, Dew. Sill. Journ. XXIV., 48, (1857.)
C. Douglasii var. *minor,* Olney, Bot. King's Exp. V., 363, (1871.)
C. Fendleriana, Bœckeler, Linnæa XXXIX., 135, (1875.)
C. Douglasii, var. *densi-spicata,* Dew. Sill. Journ. XXXII., 41, (1861.)

Abundant on dry sand or gravel, creeping like *C. siccata* amongst loose stones and throwing up stems at intervals. In the Qu'Appelle valley at Fort Ellice, and for many miles to the west; on sand-hills west of Moose Jaw, Assiniboia. (*Macoun.*) Souris Plain, near Moose Mountain, Assiniboia. (*J. M. Macoun.*) Rocky Mountains. (*Hooker, Fl.*) Red River prairie, lat. 49°, Man. (*Dawson.*)

(2530.) **C. marcida,** Boott, Hook., Fl. II., 212, (1840.)

Very abundant on the whole prairie region, from the margin of the woods on the east, to the Rocky Mountains, and northward through the whole Saskatchewan country. (*Macoun.*) Souris Plain, Assiniboia. (*J. M. Macoun.*) Red River, Man.; in a prairie swamp. (*Dawson.*) Abundant in marshy meadows at Morley, and westward to Castle Mountain within the Rocky Mountains; margins of ponds at Kamloops and Cache Creek, B.C. (*Macoun.*)

(2531.) **C. Cayana,** Desv. Fl. Chili, 205.

Not uncommon in mountain marshes at Kananaskis Station, Rocky Mountains, lat. 51°, 1885. (*Macoun.*)

* * *Spikelets androgynous, aggregated, or partly aggregated at the top of the stem.*

† *Spikelets male at top.*

(2532.) **C. vulpinoidea,** Michx., Fl. I., 69, (1803.)

C. multiflora, Muhl. (1805); Hook., Fl. II., 212; Pursh, Fl. I., 36.
C. setacea, Dew. Sill. Journ. IX., 61, (1825.)
C. scabrior, Sartw.; Dew. Sill. Journ. VIII., 349, (1849.)
C. vulpinæformis, Tuckerman, Enum. Meth., 9, (1843.)
C. bracteosa, Schweinitz, An. Tab. (1823.)
C. multiflora, var. *microsperma,* Dew. Sill. Journ. XI., 317, (1826.)

Abundant in many places throughout eastern Canada. Near St. John, N.B. (*Fowler, Cat.*) Near Andover; Hampton, N.B. (*Brittain.*)

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Lower Tobique River, N.B. (*Wetmore.*) Beaumont, Beauport and La Canardière, Q. (*St. Cyr.*) Near Kemptville, Ont. (*Porter.*) Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Montreal Mountain. (*McGill Coll. Herb.*) Abundant in wet meadows throughout central Ontario, and westward to the last portage on Nipigon River, north of Lake Superior. (*Macoun.*) Vicinity of Hamilton, Ont. (*Logie.*) Boggy ground, London, Ont. (*Burgess. Millman.*) Black River, Lake Winnipeg, (*J. M. Macoun.*) Nelson River, Keewatin. (*R. Bell.*) Canada. (*Hooker, Fl.*)

(2533.) **C. teretiuscula,** Good., Linn. Trans. II., 163, (1792); Hook., Fl. II., 213.

C. teretiuscula, var. *major*, Koch., Fl. Germ., 867..

C. paniculata, var. *teretiuscula*, Wahl. (1803); Torr. Cyp. 390.

Rather common in marshes and by lake margins from the Atlantic to the Pacific. Bogs, Truro, and Windsor, N.S. (*Macoun*) Swamps, Kouchibouguac, and Salmon rivers, N.B. (*Fowler, Cat.*) Campbellton, N.B. (*Chalmers.*) Bogs, Salt Lake, Anticosti, and at Fox River, Gaspé, Q. (*Macoun.*) Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Common in marshes at Prescott, Ont. (*Billings.*) Common in marshes along the Bay of Quinte, and in all tamarack swamps, and by ponds throughout central Ontario; Blackwater River, Lake Nipigon, north of Lake Superior. (*Macoun.*) Swamps, London, Ont. (*Burgess. Millman.*) Lake Mistassini, and Rupert River, N.E.T. (*J. M. Macoun.*) York Factory, Hudson Bay. (*R. Bell.*) In marshes and on the margins of ponds through the Rocky and Selkirk mountains, and westward through British Columbia to the coast; in swamps and marshes near Cedar Hill, Vancouver Island. (*Macoun.*) Cumberland House, on the Saskatchewan, and westward to the Rocky Mountains. (*Hooker, Fl.*)

Var. **ramosa,** Boott. Ill., 145, (1858.)

C. prairea, Dew., Wood's Botany, 750, (1861.)

C. paradoxa, Boott, Hook., Fl. II., 213, (1840.)

Generally westward, especially in the prairie region. Big swamp, Murray, Northumberland Co.; marshy border of Round Lake, Peterboro Co., Ont. (*Macoun.*) Port Colborne, Lake Erie. (*McGill Coll. Herb.*) Very common in marshes throughout Manitoba and westward over the whole of the great plains, and foot-hills of the Rocky Mountains, and northward to Lake Athabasca; occasionally in the Rocky Mountains, at Castle Mountain and in the Columbia Valley; borders of marshes and lakes at Cedar Hill, Goldstream, Qualicum, Nanaimo and Alberni, Vancouver Island. (*Macoun.*) Marshes near Victoria, Vancouver Island. (*Fletcher*)

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(2534.) **C. stipata,** Muhl. Cat. (1805); Pursh, Fl. I., 35.

C. vulpinoidea, Torr. (1836); Hook., Fl. II., 212.
C. Crus-corvi, Shuttleworth; Sommers, Cat., Nova Scotia Plants.

Very common in ditches and wet meadows, extending from the Atlantic to the Pacific. Newfoundland. (*Reeks.*) Halifax, and Annapolis, N.S. (*Macoun.*) Near Bedford, N.S. (*Sommers, Cat.*) Pictou Co., and Magdalen Islands, N.S. (*McKay.*) Common at Bass River; Norton, N.B. (*Fowler, Cat.*) Lower Tobique River, N.B. (*Hay.*) Dalhousie, N.B. (*Chalmers.*) Tadousac, mouth of Saguenay River, Q. (*Barnston.*) Water Cove, Saguenay River, Pentecost River, and Island of Orleans, Q. (*St. Cyr.*) Murray Bay, River St. Lawrence; also St. Andrews, Q. (*McGill Coll. Herb.*) Wet meadows near Ottawa. (*Fletcher, Fl. Ott.*) Common at Prescott, Ont. (*Billings.*) Kemptville, Ont. (*Porter.*) Abundant in meadows and ditches throughout central Ontario and extending westward to Lake Nipigon, at the mouth of the Blackwater River. (*Macoun.*) Swamps, vicinity of Hamilton, Ont. (*Logie.*) Swamps at London, Ont. (*Burgess.*) Muskeg Creek, Lake Winnipeg. (*J. M. Macoun.*) Marshy places along Lake Winnipegoosis, and at Swan Lake House, Man.; Columbia Valley, at Donald, B.C.; in ditches at Somenos, Vancouver Island. (*Macoun.*) Wet places, Agassiz Station, B.C. (*Fletcher.*)

(2535.) **C. alopecoidea,** Tuckerman, Enum. Meth., 18, (1843.)

C. alopecoidea, var. *sparsi-spicata,* Dew. Sill. Journ. VIII., 350, (1849.)
C. cephalophora, var. *maxima,* Dew. Sill. Journ. XLIII., 92, (1842.)

Very rare in Canada. Only collected hitherto in Manitoba. Turtle Mountain, Man., near lat. 49°, 1874. (*Burgess. Dawson.*)

(2536.) **C. sparganioides,** Muhl. Cat. (1805); Pursh, Fl. I., 36.

C. cephalophora, β. Torr. Cyp. 389, (1836.)
C. sparganioides, var. *minor,* Boott. Ill., No. 284.
C. muricata, var. *cephaloidea,* Dew. Sill. Journ. XI., 308, (1326.)

Grassy thickets, and by fences; chiefly in western Ontario. Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Miriwin's woods, and in fields, not common, Prescott, Ont. (*Billings.*) Open grassy woods and along fences; scarce at Belleville, Ont.; abundant in rich low woods, near Amherstburgh, Lake Erie, Ont. (*Macoun.*) Vicinity of Hamilton, Ont. (*Logie.*) Low meadows, London, Ont. (*Burgess. Millman.*)

(2537.) **C. macrocephala,** Willd.; Hook., Fl. II., 215, (1840.)

C. Menziesiana, Smith, Herb.

Growing in sand on Savary Island, Gulf of Georgia, B.C., 1885. (*Dawson.*) This is a most remarkable species, and has a very striking

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appearance. Like most plants growing in sea-sand, it is short and stout. (*Macoun.*) North West coast. (*Hooker, Fl.*)

(2538.) **C. cephaloidea,** Boott, Ill. 123, (1858.)

Sandy woodland near London, Ont. (*Burgess. Millman.*)

(2539.) **C. cephalophora,** Muhl. (1805); Hook., Fl. II., 212.

Not uncommon in Ontario, in grassy thickets from Belleville westward. (*Macoun.*) Port Colborne, Lake Erie. (*McGill Coll. Herb.*) Vicinity of Hamilton, Ont. (*Logie.*) Thickets, near London, Ont. (*Burgess. Millman.*)

Var. **angustifolia,** Boott. Ill., 123, (1858.)

C. Leavenworthii, Dew. Sill. Journ. II., 246, (1846.)

In abundance in rocky and grassy thickets on Pelée Island, Lake Erie. (*Macoun.*)

(2540.) **C. Muhlenbergii,** Schk. (1806); Pursh, Fl. I., 36; Hook., Fl. II., 212.

Rather uncommon in grassy thickets and open woods. On a ridge near Marmora Village, Hastings Co.; Pelée Point, Lake Erie, and Port Dover Junction, near St. Thomas, Ont. (*Macoun.*) Meadows near London, Ont. (*Burgess. Millman.*) Hudson Bay. (*Torrey.*)

(2541.) **C. Brongniartii,** Kunth. var. **densa,** Bailey, Carex, Syn., No. 241, (1886.)

C. anthericoides, Presl.; Hook., Fl. II., 211. (?)
C. paniculata, W. Boott, Bot. Calif. II., 232, (1880.)

Nootka Sound, Vancouver Island. (*Hooker, Fl.*)

(2542.) **C. lelorhyncha,** C. A. Meyer, Cyp. Nov. (1830.)

Along the Pacific coast, probably from Oregon northward. (*Bailey.*) Specimens referred here were gathered at Yale, British Columbia, May, 1875. (*Macoun.*)

(2543.) **C. muricata,** Linn., var. **gracilis,** Boott, Ill., 193, (1858.)

C. Hookeriana, Dew. Sill. Journ. XXIX., 248, (1836); Hook., Fl. II., 212.

Abundant in many parts of the prairie region, but particularly in the Qu'Appelle Valley and at Moose Jaw, Assiniboia. (*Macoun.*) Carleton House, on the Saskatchewan. (*Hooker, Fl.*)

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Var. **conflxa,** Bailey, Coulter's, Bot. Gaz. X., 203, (1885.)

C. Hoodii, W. Boott, Bot. Calif. II., 232, in part, (1880.)

C. muricata, Hook., Fl. II., 212, (?) (1840.)

Oregon, and northward into British America. (*Bailey.*) North West coast. (*Hooker, Fl.*) We have seen no specimens.

(2544.) **C. rosea,** Schk. (1806); Pursh, Fl. I., 36; Hook., Fl. II., 212.

Abundant in thickets in many parts of the eastern provinces and Ontario. New Harbor, Newfoundland. (*Rev. A. Waghorne.*) North Mountain, Annapolis, N.S. (*Macoun.*) Petitcodiac, and Portage, N.B. (*Fowler, Cat.*) Nepisiquit River, N.B. (*Hay.*) Vicinity of Calumet, Q. (*Ami.*) Stewart's Bush, Ottawa. (*Fletcher, Fl. Ott.*) Common in woods at Prescott, Ont. (*Billings.*) Moist woods and along the margins of fences and in new meadows throughout central Ontario, and westward to Lake Huron, at Owen Sound. (*Macoun.*) Vicinity of Hamilton, Ont. (*Logie.*) Thickets at London, Ont.; Emerson, and Turtle Mountain, Man. (*Burgess.*) In a swamp, Red River Valley, Man. (*Dawson.*) Lake Winnipeg. (*Bourgeau.*)

Var. **radiata,** Dew. Sill. Journ. X., 276, (1826.)

C. neglecta, Tuckerman, Enum. Meth., 19, (1843.)

C. rosea, var. *minor,* Boott. Ill., 81, (1858.)

Open grassy woods, at Picton, Prince Edward Co.; damp woods at Belleville, Hastings Co., Ont.; at Niagara Falls, in oak woods, and in woods at Amherstburgh, Lake Erie. (*Macoun.*)

Var. **retroflexa,** Torrey, Cyp. 383, (1836.)

C. retroflexa, Muhl.; Pursh, Fl. I., 35; Hook., Fl. II., 212; Macoun, Cat. No. 2050.

British America. (*Torrey.*) Moist woods, William Anderson's Farm, Ameliasburgh, Prince Edward Co., Ont. (*Macoun.*)

(2545.) **C. Hoodii,** Boott, Hook., Fl. II., 211, (1840.)

C. congesta, C. A. Meyer, *vide,* Boott.

In grassy thickets, Cypress Hills, Alberta. (*J. M. Macoun.*) Nachacco River, and McLeod's Lake, northern British Columbia, lat. 55°. (*Macoun.*)

(2546.) **C. incurva,** Lightf. (1777); Hook., Fl. II., 211.

On the summit of the mountain which rises north from Kicking Horse Lake, Rocky Mountains. (*Macoun.*) Cumberland House, Bear Lake, and Rocky Mountains. (*Hooker, Fl.*) Valley of the Mackenzie River. (*Richardson.*) Greenland. (*Lange.*)

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(2547.) **C. stenophylla,** Vahl. (1803); Hook., Fl. II., 211.

C. duriuscula, C. A. Meyer, Cyp. Nov., 214, (1831.)

Not uncommon throughout the prairie region, from Portage la Prairie westward to Kananaskis Station in the Rocky Mountains. (*Macoun.*) Prairie west of Turtle Mountain, Man. (*Dawson.*) Carleton House, on the Saskatchewan; Rocky Mountains. (*Hooker, Fl.*)

(2548.) **C. chordorhiza,** Ehrh.; Hook., Fl. II., 211.

C. fulvicoma. Dew. Sill. Journ. XXIX., 249, (1836); Hook., Fl. II., 211.

Peat bogs and marshes, generally northward. Shippegan, N.B. (*Hay.*) Lakeville, Carleton Co., N.B. (*Brittain.*) Salt Lake, and Ellis Bay, Anticosti; marsh at the mouth of the Kaministiqua, on the left bank. (*Macoun.*) Marshes, London, Ont. (*Burgess. Millman.*) Lake Mistassini, N.E.T. (*J. M. Macoun.*) Peat marsh, Telegraph Trail, lat. 54°, B.C. (*Macoun.*) Hudson Bay to Cumberland House; Lake Winnipeg, Norway House and Cumberland House, Saskatchewan River. (*Hooker, Fl.*)

† † *Spikelets male at bottom.*

(2549.) **C. festiva,** Dew. Sill. Journ. XXIX., 246, (1836); Hook., Fl. II., 215.

C. oreades, C. A. Meyer, Bull. Acad. Brux. IX., 248, (1842).

Very abundant from the prairie region westward to the Pacific coast, in thickets and meadows. White Mud River, 49th parallel: Michel Creek, Crow Nest Pass, Rocky Mountains. (*Dawson.*) In coulèes and willow clumps, Cypress and Eagle Hills, and northward to Lesser Slave Lake; common in damp meadows and thickets, from Morley through the Rocky and Selkirk mountains, and northward in British Columbia; very abundant in meadows and thickets throughout Vancouver Island. (*Macoun.*) Cumberland House to Bear Lake; Rocky Mountains. (*Hooker, Fl.*) Fraser River, near Yale, B.C. (*Fletcher.*) Lake Lindeman, lat. 59°, B.C. (*Dawson.*) Shuswap Lake, B.C. (*Prof. Fowler.*) Greenland. (*Lange.*)

Var. **Haydeniana,** W. Boott, Bot. Calif. II., 234, (1880.)

C. Haydeniana, Olney, Bot. King's Exp. V., 364, (1871.)

On the summits of the higher Rocky Mountains, from Castle Mt. to Kicking Horse Lake. (*Macoun.*)

Var. **gracilis,** Olney, Proced. Am. Acad., 407, (1872.)

On the beds of "snow slides" at the summit of the Selkirk Moun-

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tains, and at Golden City, in the Columbia Valley, B.C.; abundant in meadows and thickets in many parts of Vancouver Island, especially at Victoria and Nanaimo. (*Macoun.*)

(2550.) **C. athrostachya,** Olney, Proced. Am. Acad. VII., 393, (1871.)

Grassy thickets and meadows, growing in large clumps. Abundant in the Cypress and Bear Hills, Alberta; in British Columbia, at McLeod's Lake, lat. 55°; quite common in meadows and thickets in the neighborhood of Victoria, and Nanaimo, Vancouver Island. (*Macoun.*)

(2551.) **C. sychnocephala,** Carey, Sill. Journ. IV., 24, (1847.)

C. cyperoides, Dew. Sill. Journ. III., 171, (1847.)

Quite common in many localities in Ontario and the prairie region. Always found growing in tufts in ditches and wet, sandy places. Ditches along the Canadian Pacific railway, near Ottawa. (*Fletcher, Fl. Ott.*) Near the Freight House, Prescott Junction, Ont. (*Billings.*) Millpond, Madoc Village; in a meadow along the Moira River, Marmora township, and along Crow River, near Marmora village, all in Hastings Co.; abundant along the Port Hope and Lindsay Railroad, three miles south of Lindsay; border of a swamp five miles from Owen Sound, on the road to Southampton, Ont.; abundant on the margin of ponds, from Manitoba westward to near Battleford, on Battle River. (*Macoun.*) Quite common in gravel and wet sand, on the west shore of Lake Winnipeg. (*J. M. Macoun.*)

* * * *Spikelets distinct or nearly so.*

† *Spikelets male at top.*

(2552.) **C. tenella,** Schkuhr, Riedgr. 104, (1801.)

C. disperma, Dew. Sill. Journ. VIII., 266, (1824); Hook., Fl. II., 211.
C. gracilis, Gray, Sill. Journ. IV., 22, (1847.)

Abundant in cedar swamps and wet woods generally, from the Atlantic to the Pacific. Newfoundland. (*Cormack.*) Truro, and sphagnum swamp at the head of the North West Arm, Halifax, N.S. (*Macoun & Burgess.*) Magdalen Islands. (*J. Richardson.*) Near Pictou, N.S. (*McKay.*) Damp shady woods, Bass River, N.B. (*Fowler, Cat.*) Tobique River, N.B. (*Hay.*) Bogs at Salt Lake and Jupiter River, Anticosti. (*Macoun.*) Island of Orleans, Q. (*St. Cyr.*) Madeline River, Gaspé, Q. (*Porter.*) Recollet Swamp, Montreal. (*C. F. McCrea.*) Abundant at Sugar Bush Lake, Montcalm Co., Q. (*D'Urban.*) Dow's Swamp and other places at Ottawa. (*Fletcher, Fl. Ott.*) Marshy

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swamp near Prescott Junction, Ont. (*Billings.*) Kemptville, Ont. (*Porter.*) Cedar swamps and borders of ponds throughout central Ontario, and to Lake Superior and all the northern forest region. (*Macoun.*) Vicinity of Hamilton, Ont. (*Logie.*) Swampy ground, Komoka, Ont. (*Millman.*) Swamps at London, Ont.; and Lake of the Woods. (*Burgess.*) York Factory, Hudson Bay; Oba Lake, Ont. (*R. Bell.*) Eastern summit of North Kootanie Pass, Rocky Mountains. (*Dawson.*) In swamps in northern Manitoba, and north-westward to Peace River, lat. 56°; common in swamps at Morley and westward through the Rocky Mountains to Donald in the Columbia Valley; northward through British Columbia to McLeod's Lake, lat. 55°; rare on Vancouver Island, only noted on Mount Mark, near Qualicum. (*Macoun.*) Common in British America to the Rocky Mountains. (*Hooker, Fl.*)

†† *Spikelets male at bottom.*

(2553.) **C. trisperma,** Dew. Sill. Journ. IX., 63, (1825); Hook., Fl. II., 213.

Abundant in bogs eastward from Lake Superior. Sphagnum swamp, Truro, N.S. (*Macoun.*) Swamps and woods, Bass River; Carleton Co., N.B. (*Fowler, Cat.*) Tobique Lakes, N.B. (*Brittain.*) Swamps, Cape Rosier, and Grand Vallée, Gaspé coast; Mount Albert, Shichshock Mountains, Q. (*Macoun.*) Ouatchechou, and west point of Mingan River, Q. (*St. Cyr.*) Swamps, vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Common in swamps at Prescott, Ont. (*Billings.*) Kemptville, Ont. (*Porter.*) Cedar swamps throughout central Ontario, and westward to the country around Lake Superior and Lake Nipigon. (*Macoun.*) Vicinity of Hamilton, Ont. (*Logie.*) Swamps at London, Ont. (*Burgess. Millman.*) Cumberland House and Rocky Mountains. (*Hooker, Fl.*)

(2554.) **C. remota,** Linn. Sp. Pl., Ed. II., 1383, (1757.)

Resembles tall and lax forms of *C. canescens,* but differs in the much scattered spikes. Newfoundland, according to Gay, and Sitka, according Flora Rossica. (*Bailey, Carex, Syn.* 145.) Sitka. (*Rothr. Alask.*)

(2555.) **C. tenuiflora,** Wahl. (1803); Hook., Fl. II., 214.

Swamps and peaty meadows, not common. Tobique River; Potitcodiac, N.B. (*Fowler, Cat.*) Mer Bleue, near Ottawa. (*Fletcher, Fl. Ott.*) Swamp, five miles west of Belleville, and in a cedar swamp beyond the Jordan, Hastings Road, Ont.; Flat Rock Portage, Lake Nipigon; and in peat bogs at Red Rock, Port Arthur, and Fort William, west of Lake Superior, and at Otter Head, on the east coast; in wet woods,

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Swan Lake House, Man. (*Macoun.*) Borders of a peat bog near London, Ont. (*Burgess. Millman.*) Canada to Norway House, Lake Winnipeg. (*Hooker, Fl.*)

(2556.) **C. canescens,** Linn. Sp. II., 974, (1757.)

C. curta, Good. (1792); Hook., Fl. II., 214; Pursh, Fl. I., 37; Michx., Fl. I., (1803.)

C. vitilis, var. *pallida,* Olney, Bot. King's Exp. V., 364, (1871.)

Very common under various forms in bogs and swamps from the Atlantic to the Pacific. Brigus, Newfoundland. (*R. Bell.*) Coast of Labrador. (*McGill Coll. Herb.*) Common in bogs at Truro, Windsor, and Halifax, N.S. (*Macoun. & Burgess.*) Magdalen Islands. (*J. Richardson.*) Common at Bass River; Lily Lake, N.B. (*Fowler, Cat.*) Chipman, N. B. (*Wetmore.*) Ouatchechou, Q. (*St. Cyr.*) Tadousac, Q. (*A. T. Drummond.*) Swamps, vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Common in swamps at Prescott, Ont. (*Billings.*) Marshy spots in meadows, along margins of ponds, and in peat bogs, throughout central and northern Ontario to Lake Nipigon, and west of Lake Superior. (*Macoun.*) Swamps, London, Ont. (*Burgess.*) Wet places, Emerson, Man. (*Millman.*) Lake Mistassini, N.E.T. (*J. M. Macoun.*) North end of Lake Winnipeg. (*R. Bell.*) Apparently rare in the Rocky Mountains, only observed at Kicking Horse Lake, and at Six Mile Creek, in the Selkirk Mountains; bogs northward up the Fraser River, B.C. (*Macoun.*) Ilgacho Brook, B. C. (*Dawson.*) On the borders of ponds and lakes throughout Vancouver Island, though far from common. (*Macoun.*) Arctic sea-coast and Methy Portage. (*Richardson.*) Common in British America. (*Hooker, Fl.*) Sitka. (*Rothr. Alask.*) Greenland. (*Lange.*)

A curious form, with the spikes gathered in a glomerate almost triangular head, was collected at Langford Lake, Vancouver Island, in June, 1887.

Var. **vulgaris,** Bailey, ined. (1888.)

C. canescens, var. *alpicola,* American authors, in part.

Differs from the species in its more slender culm, and laxer habit, its small spikes and usually smaller and spreading perigynia. The commonest form of *C. canescens.* Abundant in swamps and wet meadows. Common through the Northern States, east of the Mississippi and adjacent Canada. (*Bailey.*) Common at Bass River, Carleton Co., and rather common at Salmon River, N.B. (*Fowler, Cat.*) Bogs at Salt Lake and Ellis Bay, Anticosti. (*Macoun.*) St. Charles Island, Mingan, and Ouatchechou, Q. (*St. Cyr.*) Bogs, vicinity of Ottawa. (*Fletcher. Fl. Ott.*) Cedar swamps, Dummer, Peterboro Co.; north-east coast of

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Lake Superior, and in swamps at Port Arthur, Thunder Bay; Nipigon River, Lake Superior. (*Macoun.*) Lake Mistassini, N.E.T. (*J. M. Macoun.*) Mossy bog, London, Ont. (*Burgess. Millman.*) Abundant in marshes at Swan Lake House, and around the Porcupine Mountain, Man.; Beaver Creek, in the Selkirk Mountains, B.C.; swamps near McLeod's Lake, northern British Columbia. (*Macoun.*) Vancouver city, Burrard Inlet, B.C. (*Prof. Fowler.*) It is probable that some of the above references belong to the next variety, as we have not seen the specimens.

Var. **alpicola,** Wahl.

C. sphærostycha, Dew. Sill. Journ. XLIX., 44, (1845.)
C. canescens, var. *vitilis,* Macoun Cat. No. 1968, in part, (1878.)

Smaller than the species (seldom over a foot high), the culm stiff in most alpine forms, more or less slender in the subalpine forms; spikes small and globular, or nearly so, well defined brown or tawny. Alpine or subalpine, across the continent. (*Bailey.*) Marshes at Truro, and Halifax, N.S. (*Burgess & Macoun.*) Along the Gaspé coast, and up the Ste. Anne des Monts River, and on Mount Albert, Shickshock Mountains, Q.; Partridge Lake, North Hastings, and in a swamp near Bellville, Ont. (*Macoun.*)

(2557.) **C. arcta,** Boott, Ill., 155, t. 497.

C. canescens, var. *polystachya,* Boott.; Rich. Journ. II., 344.
C. Kunzei, Olney, Proced. Am. Acad., 407, (1872.)

Swamps and ditches; extending from New Brunswick westward to Vancouver Island. Petitcodiac, Hampton, Portage, and Moss Glen, King's Co., N.B. (*Brittain.*) Gatineau Point, near Hull, Q. (*Fletcher, Fl. Ott.*) Wet shore of Lake Champlain, Q. (*Pringle.*) Abundant on Long Portage, Nipigon River; also on a Portage near Rainy Lake, Dawson route; very abundant in ditches and wet meadows at Victoria, and Nanaimo, Vancouver Island. (*Macoun*) Cedar Hill, near Victoria, Vancouver Island. (*Fletcher.*) Burrard Inlet, at Vancouver city, B.C. (*Prof. Fowler.*) Rainy Lake and Lake of the Woods. (*Richardson.*)

(2558.) **C. Deweyana,** Schweinitz, An. Tab. (1823); Hook., Fl. II., 213.

C. remota, Rich. App. Frankl. Exp. (1823); Pursh, Fl. I., 37.

In dry grassy thickets, abundant from the Atlantic westward. Point Pleasant, near Halifax; and Windsor, N.S. (*Macoun.*) Bass River; Petitcodiac; Gaspereau River, and Salmon River; Aroostook Falls, N.B. (*Fowler, Cat.*) Tobique River, N.B. (*Hay.*) Thickets along the Jupiter River, Anticosti; River Ste. Anne des Monts, Gaspé,

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Q. (*Macoun.*) Madeline River, Gaspé, Q. (*Porter.*) Montreal Mountain. (*C. F. McCrea.*) Meadows near Templeton, Q.; Port Colborne, Ont. (*McGill Coll. Herb.*) Kemptville, Ont. (*Porter.*) In all woods at Ottawa. (*Fletcher, Fl. Ott.*) Common in woods at Prescott, Ont. (*Billings.*) Woods at Carleton Place, Carleton Co., and westward throughout Ontario to the west side of Lake Superior; Lake Nipigon. (*Macoun*) In low thickets, London, Ont. (*Burgess. Millman.*) Along Lake Superior, Rainy Lake, and Lake of the Woods. (*Richardson.*) Punk Island, Lake Winnipeg. (*J. M. Macoun.*) Telegraph Trail, near Stewart's Lake, B.C. (*Macoun.*) Canada to Norway House, and Rocky Mountains. (*Hooker, Fl.*)

Var. **Bolanderi,** W. Boott, Bot. Calif. II., 236, (1880.)

C. Bolanderi, Olney, Proced. Am. Acad. VII., 393, (1868.)

Rich and damp grassy woods in numerous places on the Pacific coast. Fraser River Valley, at Yale, and Boston Bar, B.C.; abundant in thickets at Oak Bay, Goldstream, Shawnagin Lake, Cowichan River, Nanaimo, Alberni, and many other localities, Vancouver Island. (*Macoun.*) Mount Finlayson, near Victoria, Vancouver Island. (*Fletcher.*) Shores of Burrard Inlet, at Vancouver city, B.C. (*Prof. Fowler.*)

Var. **sparsiflora,** Bailey, ined.

C. Bolanderi, var. *sparsiflora,* Olney, Proced. Am. Acad., 407, (1872.)

Plant laxer in habit than the type; leaves narrow, spikes much smaller; perigynium half as large, more or less excurved. The most reduced form of the species. (*Bailey.*) Swamps near the summit of Mount Mark, near Qualicum, Vancouver Island. This is quite a distinct form and closely related to the var. *Bolanderi.* Collected at 2,500 feet altitude, 1887. (*Macoun.*)

(2559.) **C. Norvegica,** Schk. (1801); Dew. Sill. Journ. XXXII., 38, (1861.)

Abundant in numerous salt marshes at Truro, N.S.; Salt Lake, and Ellis Bay, Anticosti, and from Cape Rosier to Matane, along the Gaspé coast of the St. Lawrence. (*Macoun.*) Salt marsh, Shediac, N.B. (*Brittain.*) Whale Cove, Grand Manan, and Back Bay, Charlotte Co., N.B. (*Hay.*) Salt marshes, Lower St. Lawrence. (*Pringle.*) Sitka, and Kotzebue Sound. (*Rothr. Alask.*)

(2560.) **C. brizoides,** Linn., var. **nemoralis,** Wimmer, Fl. Siles. 401.

Arctic America, according to Boeckeler. (*Bailey, Carex, Syn.* 146.)

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(2561.) **C. echinata,** Murray, Prodr. Gœtt. 76, (1770.)

C. stellulata, Good., Linn. Trans. II., 144, (1792); Hook., Fl. II., 214; Macoun, Cat. No. 2066.
C. stellulata, var. *sterilis,* Torr. Bot. N. York, II., 380, (1843.)
C. sterilis, W. Boott, Bot. Calif. II., 236, (1880.)

Culms stiff; spikes large, all contiguous or nearly so; perigynium large, much attenuated above. (*Bailey.*) Apparently commonest eastward. Only our own specimens and what have been named *C. sterilis,* are referred to the species. All others go with the second variety. Topsail, Newfoundland. (*R. Bell.*) Petticodiac, N.B. (*Brittain.*) Swamps at Truro, and Yarmouth, N.S. (*Macoun.*) Glenelg, Guysboro, N.S. (*Faribault.*) St. Charles Islands, Mingan, and Tadousac, Q. (*St. Cyr.*) Rivière de Brig, Anticosti; Gaspé Basin, and L'anse à Valon, Gaspé, Q.; Livingston Point, Lake Nipigon, and Lake Maria, Nipigon River, Ont. (*Macoun.*) Swampy river flat, London, Ont. (*Burgess, Millman.*) Not uncommon in marshes at Morley and westward through the Rocky and Selkirk mountains, B.C.; borders of marshes at Goldstream, Alberni, and Mount Mark, near Qualicum, Vancouver Island. (*Macoun.*)

Var. **conferta,** Bailey, Carex, Cat. (1884.)

C. stellulata, var. *conferta,* Chapm. Flora, 534, (1860.)

Bogs at the head of the North West Arm, near Halifax, N.S. (*Macoun & Burgess.*) Along the coast from Newfoundland southward to Florida. (*La Pylaie.*) Differs from the species in the oblong densely flowered, and more spreading spikes, and recurved perigynium. (*Bailey.*)

Var. **microstachys,** Bœckeler, Linnæa. XXXIX., 125, (1875.)

C. scirpoides, Schkuhr, Riedgr. Nachtr. 19, (1805); Pursh, Fl. I., 37.
C. sterilis, Willd.; Pursh, Fl. I., 34, (1814.)
C. sterilis, vars. β. & γ., Torr. Cyp., 392, (1836.)
C. stellulata, vars. *scirpoides & angustata,* Gray, Man. Ed. V., 579, (1868); Macoun, Cat. No. 2066 vars.
C. echinata var. *angustata,* Bailey, Carex, Cat. (1884.)

More slender; spikes small and more scattered; perigynium smaller and less conspicuously beaked. (*Bailey.*) Very abundant in swamps and marshes throughout the eastern provinces. Halifax, N.S. (*Sommers, Cat.*) Petitcodiac; common in Kent Co., at Bass River; also Carleton Co., N.B. (*Fowler, Cat.*) Common in swamps at Truro, N.S.; and along the Ste. Anne des Monts River, Gaspé, Q. (*Macoun.*) Mingan, and Pentecost rivers, Q. (*St. Cyr.*) Bogs and marshes, common near Ottawa. (*Fletcher, Fl. Ott.*) Very common around Pres-

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cott, Ont. (*Billings.*) Extremely common throughout central Ontario and westward in the forest region to the Rocky Mountains. (*Macoun.*) Port Colborne, Ont. (*McGill Coll. Herb.*) Kemptville, Ont. (*Porter.*) Vicinity of Hamilton, Ont. (*Logie.*) Boggy places at London, Ont. (*Burgess. Millman.*) North shore of Lake Superior. (*Agassiz.*) Lake Mistassini, N.E.T.; also Souris River, and at Medicine Hat, Alberta. (*J. M. Macoun.*) From Brandon, Man., westward to the Rocky Mountains, and through them to British Columbia, and to Vancouver Island, where it is common. (*Macoun.*) Common in British America, to the Rocky Mountains. (*Hooker, Fl.*) Sitka, and Ounalashka. (*Rothr. Alask.*)

(2562.) **C. heleonastes,** Ehrh.; Linn., fil. Suppl., 414; Hook., Fl. II., 214.

C. Carltonia, Dew. Sill. Journ. XXVII., 238, (1835.)
C. marina, Dew. Sill. Journ. XXIX., 247, (1836); Hook., Fl. II., 214.

A rare and alpine or arctic species, seldom detected but easily known by its remarkably rigid appearance. In a boggy meadow on the border of a small lake, three miles south of Kicking Horse Lake, Rocky Mountains. (*Macoun.*) Hudson Bay to Cumberland House, on the Saskatchewan; Norway House, at foot of Lake Winnipeg. (*Hooker, Fl.*)

(2563.) **C. glareosa,** Wahl. Köngl. Acad. Handl. XXIV., 146, (1802); Hook., Fl. II., 214.

This species seems confined to the sea-coast, or mountains near the sea. Cape Chudleigh, and the Eskimo village of Hyla, Hudson Strait (*R. Bell.*) Ouatchechou, Q. (*St. Cyr.*) Grand Etang, Gaspé coast, and summit of Mount Albert, Shickshock Mountains, Gaspé, Q. (*Macoun. Porter.*) Shumagin Islands, Alaska. (*Harrington.*) Arctic sea-coast. (*Richardson.*) Greenland. (*Lange.*)

(2564.) **C. lagopina,** Wahl. Köngl. Acad. Handl. XXIV., 145, (1802.)

C. leporina, Willd. (1805); Hook., Fl. II., 214.

This is a boreal or mountain species seldom detected. Maritime rocks, Labrador. (*Allen.*) On rocks along the sea, near Point Seche, Gaspé coast, Q.; Stewart's Lake Mountain, British Columbia, lat. 55°. (*Macoun.*) Rocky Mountains. (*Hooker, Fl.*) South Kootanie Pass, Rocky Mountains. (*Dawson.*) On the higher Rocky and Selkirk mountains, from Castle Mountain to Roger's Pass, and the great glacier. (*Macoun.*) Greenland. (*Lange.*) Kotzebue Sound. (*Rothr. Alask.*)

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(2565.) **C. Liddoni,** Boott, Hook., Fl. II., 214, (1840.)

This species is distinguished by its erect and thick rusty head, and very large and comparitively firm brown perigynium. (*Bailey.*) Taking the above view of the species, Prof. Bailey refers our specimens to *C. pratensis*, Drej., yet Mr. Arthur Bennett, of Croydon, England, assures me that our specimens are identical with those in Boott's herbarium. It is certain that Boott's figure in Hooker's Flora Boreali Americana, is different in appearance from our specimens, and it is probable that Boott has figured a young plant of one species and retains a well grown one of another under the same name in his herbarium. Owing to the place of growth, and the absence of all boreal surroundings, I am of opinion that our prairie specimens are not *C. pratensis*, whatever else they may be, but place them there because I can do no better. Fine specimens with stout culms and well developed spikelets forming a fairly compact head, were gathered at Cedar Hill, Vancouver Island. These are referred to *C. Liddoni* by both Lange and Bailey. (*Macoun.*)

(2566.) **C. pratensis,** Drejer, Rev. Crit. Car. Bor., 24, (1841.)

Specimens that we refer here were collected on sand on the east coast of Lake Superior, above Michipicotin, in the summer of 1869, and named *C. Liddoni* by Prof. Dewey, of Rochester. From the remarks of Prof. Bailey, I am inclined to believe that they belong here. The spikelets are very much narrowed at the base, and in some instances the lower ones become compound. Specimens of this form can be seen in Prof. Dewey's herbarium. (*Macoun.*) Pic River, Lake Superior (*Loring.*) Middle Bay, Labrador. (*Allen.*) Greenland. (*Lange.*) Moose Mountain Creek and westward on the Souris Plain, Assiniboia. (*J. M. Macoun.*) Very abundant on the open prairie, and in thickets throughout Manitoba and westward to the Rocky Mountains. I have often seen many acres covered with the tufts of this species, and admired the silvery hue and nodding habit of the spikes. Rather common in the lower valleys of the Rocky Mountains and in the Columbia Valley, at Donald, B.C.; along the Nachacco River, British Columbia, and not uncommon at Goldstream, Cedar Hill, and throughout southern Vancouver Island. (*Macoun.*)

Since the notes on *C. Liddoni* and *C. pratensis* were written, I have had a report from Prof. John Lange, author of "Conspectus Floræ Grœnlandicæ." He says that the specimens from Michipicotin, Lake Superior, and the Nachacco River, B.C., are the same and seem to be intermediate between *C. scoparia*, Schk., and *C. pratensis*, Drejer. The specimens from the prairie are the same as those of Coulter's Manual, referred to *C. pratensis*, Drejer., by Bailey. The Vancouver Island

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specimens he does not know, but thinks they are different from both *C. scoparia* and *C. pratensis*. Of these he says: "Mihi ignota; forsan forma *C. scoparia*; differt a *C. pratensi*, foliis brevioribus magisque scabris, spicis magis approximatis, squamis atrofuscis, &c."—Feb. 16, 1888, Joh. Lange.

From the above it is evident that these forms are included in the specimens referred to *C. pratensis*, but we must wait for more light before finally deciding.

(2567.) **C. adusta,** Boott, Hook., Fl. II., 215, (1840.)
C. argyrantha, Tuckerman in Herb., (1859.)
C. albolutescens, Olney, Exsicc. I., 8, (1870.)
C. albolutescens, var. *argyrantha*, Olney, Exsicc. I., 9, (1870.)
C. albolutescens, var. *sparsiflora*, Olney, Exsicc. V., 11, (1870.)
C. adusta, var. *argyrantha*, Bailey, Carex, Cat. (1884.)

Richibucto, Kent Co., and other localities, N.B. (*Fowler, Cat.*) Harbor Island, Mingan, Q. (*St. Cyr.*) Woods near Niagara Falls, Ont.; very abundant in woods through which fire has run, everywhere around Lake Superior, and Lake Nipigon and westward to Rainy Lake. (*Macoun.*) Port Arthur, Lake Superior; and Emerson, Man. (*Burgess.*) On grassy slopes in the Columbia and Beaver Creek valleys, Selkirk Mountains, B. C. (*Macoun.*) Methy Portage, lat. 57°. (*Richardson.*) Common in British America to the Rocky Mountains. (*Hooker, Fl.*)

(2568.) **C. pinguis,** Bailey, Bull. Bot. Minnesota, (1886.)
C. adusta, var. *glomerata*, Bailey, Carex, Cat. (1884.)
C. albolutescens, var. *glomerata*, Olney, Exsicc. V., 10, (1870.)

This species differs from *C. adusta* in its stiff culm; dense broad head, of which some spikes, or at least the lowest one, are subtended by a short and very broad-based, nerved and pointed bract; perigynium very plump, and nearly filled by the achenium, flat or convex and nerveless, or very nearly so, on the inner face, wingless or slightly margined above. It grows in dense tufts in dry soil. (*Bailey.*) Richibucto, Kent Co.; Nepisiquit Lake and Lower Tobique River, N.B. (*Fowler, Cat.*) River Ste. Marguerite, Q. (*Pringle.*) Burnt woods, Tudor, Hastings Co.; woods, Elliott's Falls, Gull River, Victoria Co.; abundant at Livingstone Point, Lake Nipigon; Rainy River, near the Lake of the Woods; and in the Touchwood Hills, Assiniboia. (*Macoun.*)

(2569.) **C. arida,** Schweinitz & Torrey, Car. Mon. 312, (1824); Hook., Fl. II., 214.
C. scoparia, var. *Muskingumensis*, Tuckerman, Enum. Meth. 17, (1843.)
C. Muskingumensis, Schweinitz, An. Tab. (1823.)

Apparently rare in Canada. Wet thickets on the prairie, between Point du Chien and Winnipeg, Man. (*Macoun.*)

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(2570.) **C. tribuloides,** Wahl. Köngl. Acad. Handl. XXIV., 145, (1802.)

C. lagopodioides, Schk. (1806); Hook., Fl. II., 214; Pursh, Fl. I., 37.
C. scoparia, var. *lagopodioides*, Torr. Cyp. 394, (1836.)
C. lagopodioides var. *composita*, Olney, Exsicc. II., 10, (1870.)

Not uncommon in thickets, and near swamps. Flowering very late in the season and long after all forms of *C. straminea*. Bass River, Kent Co.; not rare at Salmon River, N.B. (*Fowler, Cat.*) Campbellton, N.B. (*Chalmers.*) Muddy soil, Island of Orleans, Q. (*St. Cyr.*) Not rare at Ottawa. (*Fletcher, Fl. Ott.*) Common in thickets at Prescott, Ont. (*Billings.*) Vicinity of Hamilton, Ont. (*Logie.*) Abundant in central Ontario, and extending westward to Point Meuron, west of Lake Superior. (*Macoun.*) Cumberland House, Saskatchewan River. (*Hooker, Fl.*) Port Colborne, Lake Erie. (*McGill Coll. Herb.*)

Var. **cristata,** Bailey, Carex, Syn. 148, (1886.)

C. cristata, Schweintz, An. Tab. (1823.)
C. straminea, var. *cristata*, Tuckerman, Enum. Meth. 18, (1843.)
C. lagopodioides, var. *cristata*, Carey, Gray, Man. Ed. I., (1848.)
C. mirabilis, Dew. Sill. Journ. XXX., 63, (1836.)
C. Bebbii, Olney, Exsicc. II., 12, (1870.)

Much more abundant than the species. Damp woods, Kingston, and Windsor, N.S. (*Macoun.*) Newfoundland. (*Reeks.*) Tobique River, N.B. (*Fowler, Cat.*) Canoos River, N.B. (*Vroom.*) Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Abundant throughout central Ontario, extending south-westward to Lake Erie, at Pelée Point and north-westerly to Flat Rock Portage, Nipigon River. (*Macoun.*) Michipicotin River, Ont. (*R. Bell.*) Low, wet meadows, near London, Ont. (*Burgess. Milman.*) Vicinity of Hamilton, Ont. (*Logie.*) Port Colborne, Lake Erie. (*McGill Coll. Herb.*) Lake Winnipeg to Cumberland House. (*Hooker, Fl.*)

Var. **reducta,** Bailey, Carex, Syn. 148, (1886.)

C. scoparia, var. *moniliformis*, Tuckerman, Enum. Meth. 18, (1843.)
C. lagopodioides, var. *moniliformis*, Olney, Exsicc. II., 8, (1870).

Bass River, Kent Co., N.B. (*Fowler, Cat.*)

We distinguish the three varieties as follows:—

(1.) Spikelets numerous, generally in glomerate heads; perigynia *not* recurved at the tips at maturity.

(2.) Spikelets fewer, more scattered, and the perigynia with recurved tips at maturity.

(3.) Spikelets small, very much scattered (moniliform), perigynia spreading, or recurved at the tip.

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(2571.) **C. scoparia,** Schk. (1801); Hook., Fl. II., 214; Pursh, Fl. I., 37.

C. scoparia var. *minor*, Boott. Ill. 116.
C. lagopodioides, var. *scoparia*, Boeckeler, Linnæa XXXIX., 114, (1875.)
C. leporina, Michx., Fl. I., 170, (1803.)

Abundant in meadows and borders of woods. Newfoundland. (*Reeks.*) Truro, Windsor, Kingston, and Annapolis, N.S. (*Macoun.*) Meadows, Glenelg, Guysboro Co., N.S. (*Faribault.*) Near North Sydney, Cape Breton. (*Burgess.*) Pictou Co., N.S. (*McKay.*) Very common at Bass River, Kent Co.; Campbellton, Restigouche Co., N.B. (*Fowler, Cat.*) Nepisquit Lakes, N.B. (*Brittain.*) Water Cove, Saguenay River, and St. Ambrose, Q. (*St. Cyr.*) Abundant on sandy banks of the Rivière Rouge, Argenteuil Co., Q. (*D'Urban.*) Common around Ottawa. (*Fletcher, Fl. Ott.*) Abundant in meadows at Prescott, Ont. (*Billings.*) Meadows near Kemptville, Ont. (*Porter.*) Very common in low wet meadows, growing in large tufts, throughout central Ontario, and extending westward to the west side of Lake Superior, and Lake Nipigon. (*Macoun.*) Vicinity of Hamilton, Ont. (*Logie.*) Low meadows at London, Ont. (*Burgess, Millman.*) North shore of Lake Superior. (*Agassiz.*) Lake Mistassini, N.E.T.; Muskeg Creek, and Washoe Bay, Lake Winnipeg. (*J. M. Macoun.*) Nelson and Echimamish rivers, Keewatin. (*R. Bell.*) Westward from Winnipeg to Fort Carleton, on the Saskatchewan. (*Macoun.*) Lakes Superior, Huron, Winnipeg, and Athabasca. (*Richardson.*) Common in British America. (*Hooker, Fl.*)

(2572.) **C. straminea,** Schk. (1801); Hook., Fl. II., 215.

C. leporina, Pursh, Fl. I., 36, (1814.)
C. straminea, var. *brevior*, Dew. Sill. Journ. XI., 158, (1827.)
C. straminea, var. *minor*, Dew. Sill. Journ. XI., 318, (1827.)
C. straminea, vars. *Crawei & Meadii*, Boott. Ill. 121.

In the arrangement of the various Canadian forms of this species we have followed Bailey's Carex Synopsis chiefly, but for convenience and the sake of greater accuracy in the determination, we still retain some of the older varieties placed by him under the species.

Var. **typica,** is distinguished by its stiff, erect culm, seldom two feet high, and always growing in dry places. Often in large clumps amongst rocks, or on dry prairies. Leaves quite short; spikelets seldom over five and usually at the top of the culm. Fields, Glenelg, Guysboro Co., N.S. (*Faribault.*) Kouchibouguacis; McAdam Junction, and Fredericton Junction, N.B. (*Fowler, Cat.*) Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Dry rocks, Shannonville, Hastings Co.;

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Massassagua Point, near Belleville; and on dry rocks, Tudor, North Hastings, Ont., and Livingstone Point, Lake Nipigon, Ont. (*Macoun.*) Woods near London, Ont. (*Burgess. Millman.*) Very abundant on the dry prairie west of Winnipeg, at Brandon, File Hills, Long Lake, Moose Jaw Creek, Old Wives Lakes, and westward to the Rocky Mountains. (*Macoun.*) Oba Lake, Ont.; and Nelson River, Keewatin. (*R. Bell.*) Turtle Mountain, Man., and South Antler Creek, Assiniboia. (*Burgess.*) Stony Mountain, Man. (*Prof. Fowler.*)

Var. **tenera,** Boott, Ill. 120.

C. tenera, Olney, Car. Bor. Am. (ined.)

This form is distinguished by its weak culm, longer leaves, much smaller spikelets and its different habit. Its usual habitat is damp meadows, where it grows in large clumps. It is distinguished from var. *aperta* by its erect culms and smaller spikelets. Kent Co., N.B.; rather rare. (*Fowler, Cat.*) Windsor, and Pictou, N.S. (*Macoun.*) Casselman, and Billing's Bridge, near Ottawa. (*Fletcher, Fl. Ott.*) Port Colborne, Lake Erie. (*McGill Coll. Herb.*) Common in wet meadows in central Ontario, extending westward to Port Arthur, and Fort William, Thunder Bay, Lake Superior. (*Macoun.*) Observation Point, Lake Winnipeg. (*J. M. Macoun.*) Abundant in damp soil, from Winnipeg westward to Manitoba House, Lake Manitoba, Brandon, File Hills, and the Elbow of the South Saskatchewan. (*Macoun.*) Lake Winnipeg. (*Hooker, Fl.*)

Var. **festucacea,** Boott, Ill. 120.

C. festucacea, Willd. (1805); Pursh, Fl. I., 38; Hook., Fl. II., 215.

Heads larger than the preceding, usually more scattered, slightly tapering to the base; perigynia long-beaked, and slightly spreading. St. John, and Digdeguash, N.B. (*Fowler, Cat.*) In meadows at Baddeck, Cape Breton. (*Macoun. Burgess.*) Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Banks of the Riviére Rouge, at Bevin's Lake, Argentouil Co., Q. (*D'Urban.*) Rather common in low wet meadows at Belleville, and westward through Ontario to Thunder Bay, Lake Superior. (*Macoun.*) Woodstock, Ont. (*Millman.*) London, and Parry Sound, Ont. (*Burgess.*)

Var. **fœnea,** Torrey, Cyp. 395, (1836.)

C. fœnea, Willd. Enum. Pl. Hort. Berol. 957, (1809.)

C. straminea, var. *chlorostachys*, Bœckeler, Linnæa XXXIX., 118, (1875.)

We have no Canadian specimens of this variety except one from Olney, which he obtained from Prof. Fowler, of Queen's College, Kingston, Ont., in 1870, collected in Kent Co., New Brunswick.

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Var. **alata,** Bailey, Carex, Cat. (1884.)

C. alata, Torr. Cyp. 396, (1836.)
C. alata, var. *pulchra*, Olney, Exsicc. I., 14, (1870.)

Bass River, Kent Co., N.B., 1870. (*Prof. Fowler* vide *Olney.*) Not uncommon in thickets west of Portage la Prairie, Man. (*Macoun.*)

Var. **mixta,** Bailey, Carex, Syn. 151, (1886.)

C. lagopodioides, W. Boott, Bot. Calif. II., 237, (1880.)
C. adusta, W. Boott, Bot. Calif. II., 238, (1880.)

This variety is the representative of *C. straminea* on Vancouver Island. It is rather rare, being observed only on Cedar Hill, and at Nanaimo, and Alberni. (*Macoun.*)

Var. **monilliformis,** Tuckerman, Enum. Meth., 17, (1843.)

C. fœnea, var. (?) *sabulonum*, Gray, Man. Ed. V., 580, (1868.)
C. silicea, Olney, Proced. Am. Acad. VII., 393, (1868.)
C. straminea, var. *silicea*, Bailey, Carex, Cat. (1884.)

This variety is intended to include only the maritime form on the Atlantic coast. Sand beach, South Bar, North Sydney, Cape Breton; on the beach, Point Pleasant, Halifax, N.S. (*Macoun.*) Sand beaches on the coast at Kouchibouguac, N.B. (*Fowler, Cat.*) L'Anse à Griffon, Gaspé coast. (*Macoun.*)

Var. **aperta,** Boott, Ill. 120.

C. tenera, Dew. Sill. Journ. VIII., 97, (1824.)
C. tenera, var. *major*, Olney, Exsicc. II., 15, (1870.)
C. straminea, var. *tenera*, Bailey, Bot. Gaz. X., 381, (1885.)

This form is very little known in Canada, but is very likely common in the eastern provinces, and taken either for the typo or var. *tenera.* It is distinguished from my *tenera* by its globular spikelets disposed in a loose nodding head, with a long setaceous bract at the base of the lower one. In damp meadows near Casselman, thirty miles south of Ottawa. (*Fletcher, Fl. Ott.*)

(2573.) **C. leporina,** Linn., var. **Americana,** Olney, Proced. Am. Acad., 407, (1872.)

C. petasata, Dew. Sill. Journ. XXIX., 246, (1836); Hook., Fl. II., 214.
C. ovalis, Good.; Hook., Fl. II., 214, (1840.)

Rocky Mountains. (*Hooker, Fl.*) Abundant in British Columbia, at Yale, Cache Creek, Clinton, and northward to the Nachacco, and Fort McLeod, lat. 55°; also on the summit of Mount Arrowsmith, Vancouver Island. (*Macoun.*) Stikine River, above the Cañon, and at Telegraph Creek, lat. 58°, B.C. (*Dawson.*) Ounalashka. (*Rothr. Alask.*)

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III. *Uppermost spikelet androgynous, male at base; the others female.*

* Stigmas II.

(2574.) **C. bicolor,** Allioni, Fl. Ped. II., 267; Hook., Fl. II., 216.

Greenland, and Labrador. (*Hooker, Fl.*) Greenland. (*Lange.*) We have Rocky Mountain specimens of *C. aurea*, which have black scales with a white centre, which approach this, but the beak of the fruit is that of the latter species.

* * Stigmas III.

(2575.) **C. Buxbaumii,** Wahl. Köngl. Acad. Handl. XXIV., 163, (1802.)

C. canescens, Hook., Fl. II., 216, (1840.)

Bogs and beaver meadows; not uncommon from the Atlantic to the Pacific. Newfoundland. (*Reeks.*) Bog at the head of the North West Arm, Halifax, N.S.; bogs at Louisburg, Cape Breton. (*Macoun.*) Restigouche, near the mouth of the Upsalquitch; Lily Lake, N.B. (*Fowler, Cat.*) Near St. John, N.B. (*Burgess.*) Salt Lake, and Jupiter River, Anticosti; Point Fame, and Matane, Gaspé coast, Q. (*Macoun.*) Bogs, vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Beaver meadow, border of Hooper's Lake, Tudor, Hastings Co.; Red Bay, Lake Huron; Sturgeon Lake, Nipigon River; on rocks at the head of the rapid Current River, Port Arthur, and on marshy ground at Pic River, and Otter Head, east coast Lake Superior. (*Macoun.*) Bogs, near Kingston, Ont. (*Prof. Fowler.*) Lake Mistassini, N.E.T. (*J. M. Macoun.*) In mountain meadows, and bogs from Morley westward through the Rocky Mountains to Roger's Pass, Selkirk Mountains; shores of Horne Lake, near Qualicum, Vancouver Island. (*Macoun.*) Canada to Cumberland House, on the Saskatchewan; Lake Winnipeg, near Norway House; Observatory Inlet, and Sitka. (*Hooker, Fl.*) Sitka. (*Rothr. Alask.*)

(2576.) **C. Gmelini,** Hook., Bot. Beechy's Voy., 118, (1834); Hook., Fl. II., 216.

Oregon to Alaska. (*Bailey.*) North West coast, and Kotzebue Sound. (*Hooker, Fl.*) Sitka, Ounalashka, and Kotzebue Sound. (*Rothr. Alask.*) Port Etches, Alaska. (*Barclay.* Specimen sent from British Museum.)

(2577.) **C. Mertensii,** Prescott, (1833); Hook., Fl. II., 217.

C. Columbiana, Dew. Sill. Journ. XXX., 62, (1836.)

One of the finest carices we have, and even worthy of a place in our

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gardens. Growing in tufts by mountain streams, and on the Pacific coast. Washington territory, and northward to Sitka. (*Bailey.*) Abundant by streams in the valleys of the Selkirk Mountains, B.C.; in stream beds on Mount Mark, Vancouver Island, alt. 2,500 feet. (*Macoun.*) Pitt River, B.C. (*Hill.*) Shores of Burrard Inlet, Vancouver city, B. C. (*Prof. Fowler.*) North West coast to Sitka. (*Hooker, Fl.*) Ounalashka, and Sitka. (*Rothr. Alask.*) Port Etches, Sitka. (*Barclay.*)

(2578.) **C. atrata,** Linn., Sp. Pl. 976, (1753); Hook., Fl. II., 216.

On mountains and by rivers and lakes in the northern forest region. Madawaska and Tobique rivers, N.B. (*Fowler, Cat.*) Nicatau Lake, N.B. (*Hay.*) Near Jupiter River, and at Becscie River, Anticosti; in fields, Gaspé Basin; and along the Ste. Anne des Monts River, Gaspé, Q. (*Macoun.*) Table-top Mountain, and Madeline River, Gaspé, Q. (*Porter.*) Temiscouata, Q. (*Burgess.*) Lake Mistassini, N.E.T. (*J. M. Macoun.*) Hayes River, Keewatin. (*R. Bell.*) Shore of Current River, at Port Arthur, Lake Superior; high hills near Lesser Slave Lake, and at Peace River Cañon, lat. 56; quite common in grassy places, from Morley westward through the Rocky Mountains to Roger's Pass, Selkirk Mountains, B.C. (*Macoun.*) Along Belly River, lat. 49°. (*Burgess.*) Damp wood, Camp Akamina, Rocky Mountains, lat. 49°. (*Dawson.*) Goose Creek Mountain, five miles from Keithly, B.C., alt. 5,800 feet. (*Bowman.*) Rocky Mountains to arctic America. (*Hooker, Fl.*) Kotzebue Sound. (*Rothr. Alask.*) Frances River, near lat. 61°, north of British Columbia. (*Dawson.*)

Var. **nigra,** Boott, Ill. 114.

C. nigra, All. Fl. Ped. II., 267; Hook., Fl. II., 224, (1840.)

Apparently rare or overlooked in Canada. On the higher mountain slopes and summits of the Rocky Mountains westward from Castle Mountain to the Selkirk Mountains, at Roger's Pass, B.C.; Stewart's Lake Mountain, B.C., lat. 55°. (*Macoun.*) Labrador. (*Schweinitz, Torrey* vide *Hooker, Fl.*)

Var. **ovata,** Boott, Ill. 114.

C. ovata, Rudge, Linn. Trans. VII., 96, (1804); Hook., Fl. II., 216.

Newfoundland, and Rocky Mountains. (*Hooker, Fl.*)

(2579.) **C. heteroneura,** W. Boott, Bot. Calif. II., 239, (1880.)

Summit of the South Kootanie Pass, Rocky Mountains, 1881. (*Dawson.*) Only a few specimens were obtained, but these accord well with

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the description. The light colored auricles of the bracts, and white perigynia with a purple emarginate tip, separate it from the var. *erecta* of the preceding species.

(2580.) **C. alpina,** Swartz. Lilj. Svensk. Fl., Ed. II., 26.

C. Vahlii, Schk.; Hook., Fl. II., 216, (1840.)
C. media, R. Br., App. Frankl. Narr., 763, (1823.)
C. alpina, var. *nigrescens*. Olney, Cat. Wheeler's Pl., 53.

Not uncommon northward, or on mountains. Crevices of rocks at Jupiter River, and Ellis Bay, Anticosti; fall of Ste. Anne des Monts, at the base of Mount Albert, Q.; shores of Lake Nipigon, and the shore of Lake Superior, at Port Arthur, Ont. (*Macoun.*) North shore of Lake Superior. (*Agassiz.*) Moose Factory, James Bay. (*Cottar & Dr. Hayden.*) Fort George, James Bay. (*J. M. Macoun.*) South Kootanie Pass, Rocky Mountains. (*Dawson.*) Wet woods, Swan Lake House, Man.; woods along the route from Edmonton to Peace River and at Lake Athabasca; occasionally met with in the Rocky Mountains, westward to Kicking Horse Lake; mountain woods at McLeod's Lake, B.C., lat. 55°. (*Macoun.*) Common in British America to Arctic coast; Rocky Mountains. (*Hooker, Fl.*) Lewes River, lat. 62°, north of British Columbia. (*Dawson.*)

(2581.) **C. Parryana,** Dew. Sill. Journ. XXVIII., 239, (1835); Hook., Fl. II., 216, in part.

C. arctica, Dew. Sill. Journ. XXVII., 239, (1835.)
C. Hallii, Olney, Hayden's Rep. 496, (1871.)

Abundant in the northern part of the prairie region, extending from Portage la Prairie by Fort Ellice, Touchwood Hills, Fort Carleton, and Edmonton, to Lac la Nun, near the Athabasca River; rather rare along the Bow River, at Morley. (*Macoun.*) Carleton Fort. (*Hooker, Fl.*) In the prairie region all the specimens have the terminal spikelet androgynous; in some of those from Lac la Nun, it is entirely staminate, and in others androgynous.

(2582.) **C. virescens,** Muhl. (1806); Pursh, Fl. I., 39, (1814.)

C. costata, Schweinitz, An. Tab. (1823.)
C. virescens, var. *elliptica*. Olney, Exsicc. III., 21, (1870.)

In open grassy woods, western Ontario. Quite common in open woods, Niagara Falls, Essex Centre, and Amherstburgh, Lake Erie. (*Macoun.*) Low woods, near Leamington, Essex Co.; and Point aux Pins, Lake Erie. (*Burgess.*)

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(2583.) **C. triceps,** Michx. Fl. I., 170, (1803); Pursh, Fl. I., 40.
C. hirsuta, Willd.; Hook., Fl. II., 216, (1840.)
C. viridula, Schwein. & Torr. Car. Mon., 320, (1824.)
C. hirsuta, var. *pedunculata*, Schwein. & Torr. Car. Mon. 323, (1824.)
C. complanata, Torr. & Hook., Monogr. 408, (1836.)
C. Smithii, Porter; Olney, Exsicc. I., 28, (1870.)
C. Bolliana, Boeckeler, Flora, 40, (1878.)

Rather rare in western Ontario, or overlooked. Abundant in rocky thickets, Queenstown Heights, and Foster's Flats, near the whirlpool, Niagara Falls. (*Macoun.*)

(2584.) **C. gracillima,** Schweinitz, An. Tab. (1823); Hook. Fl. II., 217.
C. digitalis, Schwein. & Torr. Car. Mon. 324, (1824.)

Abundant in open woods and meadows. Woods at Truro, Windsor, and Yarmouth, N.S.; North Sydney, Cape Breton. (*Macoun.*) Newfoundland. (*Reeks.*) Bass River, Kent Co.; Tobique River, N.B. (*Fowler, Cat.*) Frye's Island, N.B. (*Hay.*) Petitcodiac, and Clifton, N.B. (*Brittain.*) Rather common at Ottawa. (*Fletcher, Fl. Ott.*) Common in meadows at Prescott, Ont. (*Billings.*) Kemptville, Ont. (*Porter.*) Very common from Carleton Place westward to Belleville, Owen Sound, and thence to Kakabeka Falls, thirty miles west of Port Arthur, Lake Superior. (*Macoun.*) Vicinity of Hamilton, Ont. (*Logie.*) Wet meadows, London, Ont. (*Burgess. Millman.*) Canada to Norway House, north end of Lake Winnipeg. (*Hooker, Fl.*)

(2585.) **C. formosa,** Dew. Sill. Journ. VIII., 97, (1824.)

Apparently very rare in Canada. Found in profusion in a meadow on the right bank of the Moira, near the paper mill, Belleville, Ont., June 18, 1867. Never collected since 1873.

(2586.) **C. squarrosa,** Linn., Sp. Pl. 973, (1753.)
C. typhina, Michx., Fl. I., 169, (1803.)
C. typhinoides, Schweinitz, An. Tab. (1823.)

This species seems confined to a restricted area in western Quebec and Eastern Ontario. Low sandy beach, Buckingham, Ottawa River, Q. (*Ami.*) Duck Island, near Ottawa. (*Fletcher, Fl. Ott.*)

III. *Spikelets sometimes all staminate at the tip, or with one androgynous or altogether staminate.*

* Stigmas II. or III.

(2587.) **C. petricosa,** Dew. Sill. Journ. XXIX., 246, (1836); Hook., Fl. II., 216.

Summits of the Rocky Mountains, between lat. 54°–56°. (*Drum-*

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mond.) Drummond collected in the Rocky Mountains, between the sources of the Athabasca and Peace River. The latter river leaves the mountains in lat. 56° 12′, so that all his mountain species were gathered south of lat. 56°. (*Macoun.*)

(2588.) **C. Franklinii,** Boott, Hook., Fl. II., 217, t. 218, (1840.)
Rocky mountains, about lat. 56°. (*Drummond.*)

(2589.) **C. misandra,** R. Br., Suppl. Parry's Voy., 283, (1823.)
C. fuliginosa, Sternb. & Hoppe.; Hook., Fl. II., 224, (1840.)
C. misandra, var. *elatior,* Lange, Fl. Grœn., 140, (1880.)
Arctic sea-coast. (*Richardson.*) Repulse Bay, and arctic coast. (*Hooker, Fl.*) Throughout Arctic America. (*Bailey.*) Port Kennedy, Baffin Bay. (*Dr. Walker.*) Greenland. (*Lange.*) Between Fort Churchill, and York Factory, Hudson Bay. (*Dr. Rae.*) Kotzebue Sound, and Norton Sound. (*Rothr. Alask.*) Cape Chudleigh, Digge's Island, and the Eskimo Village of Hyla, Hudson Strait. (*R. Bell.*)

(2590.) **C. atrofusca,** Schkuhr. Riedgr. 106, f. 82, (1801.)
C. ustulata, Wahl.; Schk. f. 82, (1803); Hook., Fl. II., 224.
Labrador. (*Schweinitz & Torrey,* vide *Hooker, Fl.*)

(2591.) **C. aurea,** Nuttall, Gen. N. Amer. Pl. II., 205, (1818); Hook., Fl. II., 226.
C. mutica, R. Br., Frankl. Narr. App. 763, (1823.)
C. pyriformis, Schweinitz, An. Tab. (1823.)
C. aurea var. *androgyna,* Olney, Exsicc. I., 15, (1870.)
Common in wet meadows, and springy places from the Atlantic to the Pacific. Newfoundland. (*Reeks.*) Grassy places at Annapolis, Truro, and Windsor, N.S. (*Macoun.*) Pictou Co., N.S. (*McKay.*) Near St. John, Kennebeccasis Island, Andover, and Minister's Face, N.B. (*Fowler, Cat.*) Lower Tobique River, N.B. (*Hay.*) Rivière de Brig, Anticosti; on rocks along the Ste. Anne des Monts River, Gaspé, Q. (*Macoun.*) Ste. Geneviève Island, Mingan Island, and Island of Orleans, Q. (*St. Cyr.*) Madeline River, Gaspé, Q. (*Porter.*) Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Field near Fort Wellington, Prescott, Ont. (*Billings.*) Abundant in cedar swamps and wet meadows throughout central and northern Ontario, to Red Bay, Lake Huron, and around Lake Superior, where it is chiefly the androgynous form; to Lake Nipigon, at Livingstone Point, and to Thunder Bay, at Port Arthur, and Fort William. (*Macoun.*) Vicinity of Hamilton, Ont. (*Logie.*) London; Point aux Pins, Lake Erie; and Port Arthur, Lake Superior; Lake of the Woods. (*Burgess.*) Lake Mistassini,

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N.E.T.; Severn River, Keewatin. (*J. M. Macoun.*) Oba Lake, Ont.; Knee Lake and Nelson River, Keewatin. (*R. Bell.*) Lake of the Woods; South Kootanie Pass, and north fork of Old Man River, Rocky Mountains. (*Dawson.*) Moose Mountain Creek, Assiniboia. (*J. M. Macoun.*) Abundant on the prairie in wet spots from Winnipeg westward to the Rocky Mountains, and northward to Peace River, lat. 58°; in the foot-hills, and from Morley westward through the Rocky Mountains to Roger's Pass, in the Selkirk Mountains; abundant in northern British Columbia, to Fort McLeod, lat. 55°; Somenos; and Qualicum, at Horne Lake, Vancouver Island; rather rare. (*Macoun.*) Lake Winnipeg to Carleton House and the Rocky Mountains. (*Hooker, Fl.*) Pelly River, lat. 63°, north of British Columbia. (*Dawson.*)

(2592.) **C. albata,** Bailey, in herb.

Prof. Bailey considers this the American representative of *C. frigida,* Allioni. It is a most remarkable and distinct *Carex,* and can be recognized at once by its dark brown spikelets, and long, narrow, and spreading perigynia. Spikelets usually four, nearly all staminate at the apex; scales brown, scarious-margined and blunt, and scarcely half as long as the tapering perigynium which is toothed at the apex. The lowest spikelet is generally long peduncled, and often four inches below the next one above, the two upper ones are so close together that they appear as one. Gathered in quantity on the borders of small ponds, Mount Mark, Vancouver Island, alt. 2,500 feet, July 27th, 1887. (*Macoun.*)

(2593.) **C. prasina,** Wahl. Köngl. Acad. Handl. XXIV., 161, (1802.)

C. miliacea, Muhl. (1806); Hook., Fl. II., 216; Macoun, Cat. No. 2022.

Growing in clumps in low wet places near springs in woods; rather rare. In a ravine on Simon Terrill's Farm, Brighton, Northumberland Co., Ont.; in thickets at Port Stanley, Elgin Co., Ont. (*Macoun.*) Low grounds, London, Ont. (*Burgess. Millman.*) Canada. (*Hooker, Fl.*)

(2594.) **C. debilis,** Michx., Fl. I., 172, (1803.)

C. tenuis, Rudge, Linn., Trans. VII., 97, (1804.)
C. flexuosa, Muhl.; Pursh, Fl. I., 43, (1814.)
C. debilis, var. β., Boott. Ill. 92.

Not uncommon in woods and thickets in Nova Scotia, at Truro; on McNab's Island at Halifax, and at Annapolis; also abundant in grassy thickets at North Sydney, Cape Breton. (*Macoun & Burgess.*) Bass River, Kent Co., and Fredericton; Carleton Co.; common at Salmon River, N.B. (*Fowler, Cat.*) Newfoundland. (*Reeks.*)

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(2595.) **C. Œderi,** Retz., Ehrh. Calam. Exsicc., No. 79; Hook., Fl. II., 225, (1840.)

C. flava, Willd.; Pursh, Fl. I., 41, (1814.)
C. viridula, Michx., Fl. I., 170, (1803.)
C. flava, var. *lutescens*, Wahl., Fl. Lapl., 234, (1812.)

In gravel on river and lake margins, from the Atlantic to the Pacific. Common along the river at Yarmouth, and Annapolis, N.S. (*Macoun.*) On the shore at Rothesay; Carleton Co.; and Tobique River, N.B. (*Fowler, Cat.*) Vicinity of Jupiter River, and at Ellis Bay, Anticosti. (*Macoun.*) River margins at Ottawa. (*Fletcher, Fl. Ott.*) Near Fort Wellington, Prescott, Ont. (*Billings.*) Shore of Toronto Island, Lake Ontario. (*Millman.*) West Rideau Lake, Ont. (*Porter.*) Abundant in moist sand, Presqu'ile Point, and Wellington Beach, Lake Ontario; Gull River, at Balsam Rapids, and up to Minden, Victoria Co.; Gull Lake, Kennebec, Addington Co.; also at Owen Sound, Ont.; Sault Ste. Marie, and around the east and north sides of Lake Superior, and northward to Lake Nipigon, at Nipigon House. (*Macoun.*) North shore of Lake Superior. (*Agassiz.*) London; Saugeen, Lake Huron; Parry Sound, Georgian Bay; Point aux Pins, and Blenheim, Lake Erie. (*Burgess.*) Rainy River and Lake. (*Richardson.*) Rupert River, N.E.T.; and Severn River, Keewatin; Hurricane Hills, west of Moose Mountain, Assiniboia. (*J. M. Macoun.*) Abundant on the margins of salt ponds, from Winnipeg westward across the prairies to the Rocky Mountains; rather common in marshes and around springs, from Morley westward through the Rocky Mountains to Roger's Pass, in the Selkirk Mountains; common on lake margins, at Cedar Hill, Nanaimo, Qualicum, and Alberni, Vancouver Island. (*Macoun.*) Niagara, Lake Winnipeg, and Hudson Bay. (*Hooker, Fl.*) Greenland. (*Lange.*)

(2596.) **C. flava,** Linn., Sp. Pl. 975, (1753); Hook., Fl. II., 225.

C. lepidocarpa, Tausch, Flora, 179, (1834.)
C. flava, var. *androgyna*, Olney, Exsicc. III., 27, (1871.)

Not uncommon in wet meadows, and by river margins, from the Atlantic to the Pacific. Newfoundland. (*Reeks.*) Pictou, Truro, and Yarmouth, N.S. (*Macoun.*) Common in damp meadows, St. John, and Bass River. N.B. (*Fowler, Cat.*) Tobique River, N.B. (*Hay.*) Jupiter River, Anticosti; (androgynous form) and in abundance in meadows at Gaspé Basin, Q. (*Macoun.*) Madeline River, Gaspé, Q. (*Porter.*) Pentecost River, Q. (*St. Cyr.*) Beaver meadows, Partridge Lake, Grimsthorpe, North Hastings; in great profusion in a meadow near Foxboro, Hastings Co.; one mile north of Colborne, Northumberland Co.; beaver meadows, Lake Isaac, Bruce Peninsula; marshy place, mouth of Current River, Port Arthur, Lake Superior; Nipigon

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House, Lake Nipigon, north of Lake Superior. (*Macoun.*) Swampy river flat, London, Ont. (*Burgess. Millman.*) Lake Mistassini, N.E.T. (*J. M. Macoun.*) Rather common on the margins of rivers and small streams, from the Kananaskis westward through the Rocky Mountains to the Columbia Valley, at Donald, B. C. (*Macoun.*) Lake Winnipeg. (*Hooker, Fl.*)

Var. **rectorostrata,** Bailey, (ined.)

C. Urbani, (?) Bœckeler, Engler's Bot. Jahrb. VII., 280, (1886.)

Plant less yellow than the species. Spikes more scattered, the lowest two or three inches from the next above, remote and usually conspicuously stalked, beak short, straight or nearly so. (*Bailey.*) This form seems to me to come between *C. flava,* and *C. Œderi,* but is unlike either. The specimens referred here agree in many respects with the description of *C. Urbani,* but as that species is based on immature specimens, allowance must be made for inaccuracies. Our specimens are in some cases one foot or more high, and in most cases the lower spikelet is distant and compound. The plant approaches *C. flava* in general appearance, but the spikelets and perigynia are much smaller, and the latter is not reflexed at maturity. Nanaimo, Goldstream, Shawnigan Lake, and Horne Lake near Qualicum, Vancouver Island. Habitat is in wet gravel along rivers or lakes. (*Macoun.*) Spence's Bridge, along the Thompson River, B.C., 1885. (*Fletcher.*)

V. *Spikelets unisexual, the upper male; mostly single; the rest female or sparingly androgynous.*

* Stigmas II.

(2597.) **C. cæspitosa,** Linn., Fl. Suec. Ed. II., 333.

C. concolor, R. Br. Suppl. App. Parry's Voy., 218, (1823.)
C. Pacifica, Drejer., Fl. Ex. Hafn., 292.
C. Drejeri, Lang. Fl. Ratisb., 548.

Said by Bœeckler to occur in British America. (*Bailey.*) Newfoundland. (*Reeks.*) Between Repulse Bay and Cape Lady Pelly, Hudson Bay. (*Dr. Rae.*) Wet meadow, Nachacco River, British Columbia. The specimens referred here are young, but they resemble very closely *C. cæspitosa* of Europe. (*Macoun.*)

Var. **filifolia,** Boott. Ill. 182.

C. aperta, var. *angustifolia,* Boott, Hook., Fl. II., 218, (1840.)

Fort Good Hope, Mackenzie River, lat. 67°. (*Dr. Richardson.*) Cascade Mountains, lat. about 49°. (*Dr. Lyall.*) A stouter form. (*Bailey.*)

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(2598.) **C. vulgaris,** Fries. Mant. III., 155, (1846.)

C. cæspitosa, Good., Linn. Trans. II., 195, (1792); Pursh, Fl. I., 38.
C. Goodenovii, Gay, Ann. Sci. Nat. (2d. Ser.) XI., 191, (1838.)
C. limula, (?) Gray, Man. Ed. V., 582, (1868.)
C. dubitita, Sommers, Cat. Nov. Scotia Plants.

This species, in one form or another, crosses the continent from the Atlantic to the Pacific. Newfoundland. (*R. Bell.*) Abundant in wet meadows at Truro, Windsor, Yarmouth, Point Pleasant, and North West Arm, Halifax, N.S. (*Macoun & Burgess.*) Pictou, Co., N.S. (*McKay.*) Halifax, N.S. (*Sommers, Cat.*) Bass River, Kent Co., and Carleton Co., N.B. (*Fowler, Cat.*) St. Andrews, N.B. (*Vroom.*) Boggy places, at South West Point, Anticosti; low meadows at Gaspé Basin, and Rivière Pierre, Gaspé coast, Q. (*Macoun.*) Mingan River, Q. (*St. Cyr.*) Cacouna, St. Lawrence River. (*Burgess.*) Mecatina River, Q. (*McGill Coll. Herb.*) Lake Superior, Lake Huron, and Lake Winnipeg. (*Richardson.*) North shore of Lake Superior. (*Agassiz.*) In a wet prairie near McLeod's Lake, B. C. (*Macoun.*) Alaska. (*Bailey.*) Greenland. (*Lange.*) Sitka, and Kotzebue Sound. (*Rothr. Alask.*)

Var. **juncella,** Fries, Summa, 230.

C. Kelloggii, W. Boott, Bot. Calif. II., 240, (1880.)

Specimens referrod here by Mr. W. Boott, were collected at Yarmouth, at the railway bridge over the Weymouth, and at Windsor, N.S.; shores of Red Bay, Lake Huron. (*Macoun.*) Western summit of the North Kootanie Pass, Rocky Mountains. (*Dawson.*)

Var. **hyperborea,** Boott. Ill. 167.

C. Bigelovii, Torr.; Schweinitz, An. Tab. (1823.)
C. Washingtoniana, Dew. Sill. Journ. X., 272, (1826.)
C. saxatilis, Dew., Wood's Bot. Ed. I., 581, (1845.)
C. saxatilis, var. *Bigelovii*, Torr. Cyp. 397, (1836.)
C. hyperborea, Drej. Revis. Crit. Car. 41, (1841.)
C. rigida, var. *Bigelovii*, Tuckerman, Enum. Meth. 19, (1843.)
C. dubitata, Dew., Wood's Bot. 755, (1861.)
C. rigida, Good.; Hook., Fl. II., 217, in part, (1840.)

On the summit of Mount Albert, Shickshock Mountains, Gaspé, alt. 4,000 feet. (*Macoun.*) Lower St. Lawrence, Q. (*Pringle.*) Nain, and Ford's Harbor, coast of Labrador; Cape Chudleigh, and Eskimo Village of Hyla, Hudson Strait. (*R. Bell.*) Labrador, and arctic coast. (*Hooker, Fl.*) Northern California to Alaska. (*Bailey.*) Greenland. (*Lange.*) Kotzebue Sound, and Norton Sound. (*Rothr. Alask.*)

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Var. **alpina,** Boott. Ill. 167.

C. rigida, Good.; Hook., Fl. II., 217, in part, (1840.)

Mountains of Colorado to Alaska. (*Bailey.*) Mountains near McLeod's Lake, lat. 55°, northern British Columbia. (*Macoun.*)

(2599.) **C. decidua,** Boott, Linn. Trans. XX., 119, (1845.)

C. Andersoni, Boott, Hook., Fl. Antarct. II., 364.

Ounalashka, 1885. Gathered by Mr. S. Applegate, Signal Observer at that station, and determined by Prof. Bailey. A few specimens of a *Carex* akin to this were gathered at Roger's Pass, Selkirk Mountains, in the summer of 1885. They agree with Prof. Bailey's remark on page 81 of his synopsis, in having the "scales and perigynia deciduous; perigynium conspicuously stipulate and strongly nerved." It may be a form of *C. vulgaris,* but we have not material enough to determine.

(2600.) **C. invisa,** Bailey, Carex, Syn. No. 68, (1886.)

C. podocarpa, W. Boott, Bot. Calif. II., 245, (1880.)

On the summits of the higher Rocky Mountains, at Kicking Horse Lake and westward to Roger's Pass, Selkirk Mountains; abundant on the summit of Mount Arrowsmith, Vancouver Island, alt. 5,500 feet. (*Macoun.*)

(2601.) **C. Jamesii,** Torrey, Cyp., 398, (1836.)

C. compacta, Hook., Fl. II., 220, (1840.)

South Kootanie Pass, Rocky Mountains, lat. 49°. (*Dawson.*) Rocky Mountains. (*Hooker, Fl.*) Rather common in wet places from Morley westward through the Rocky Mountains to Roger's Pass, in the Selkirk Mountains, B.C. (*Macoun.*) Cariboo Mountains, B.C., alt. 6,000 feet. (*Bowman.*)

(2602.) **C. aquatilis,** Wahl. Köngl. Acad. Handl. XXIV., 165, (1802.)

Common in wet meadows and ditches from the Atlantic to the Pacific and northward. Newfoundland. (*Reeks.*) In ditches at Truro. Halifax, and Windsor, N.S. (*Macoun.*) Kent, and St. John Co's., and Harris Cove, N.B. (*Fowler, Cat.*) Salt Lake, and Becscie River, Anticosti; mouths of all rivers on the Gaspé coast, and at Mont Louis and Grand Etang, Q. (*Macoun.*) Jacques Cartier River, Quebec Co., Q. (*St. Cyr.*) Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Abundant in marshes along the Bay of Quinte, and westward throughout Ontario to Lake Huron, and north-westerly around Lake Superior to Thunder Bay, at Port Arthur. (*Macoun.*) Island east of Mississaugi Point, Lake Huron; Nelson River, and York Factory, Hudson Bay. (*R. Bell.*)

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Lake Mistassini, N.E.T.; Charlton Island, "The Twins," and Fort George, James Bay; Severn River, Keewatin; Muskeg Island, Lake Winnipeg. (*J. M. Macoun.*) Lakes Superior and Huron; Fort Simpson, Fort Chipweyan, and Methy Portage. (*Richardson.*) Wet prairies at Emerson, Man. (*Burgess.*) Extremely abundant over the whole prairie region, on the borders of ponds and in marshes, extending northwesterly to Peace River, in lat. 58°; rather common in the Rocky Mountains, from Calgary, on Bow River, to Roger's Pass, in the Selkirk Mountains, B.C.; common in northern British Columbia, extending far northward; rather rare on Vancouver Island; only observed at Lost Lake, near Cedar Hill. (*Macoun.*) Canada to Mackenzie River; Rocky Mountains. (*Hooker, Fl.*) Ounalashka and Kotzebue Sound. (*Rothr. Alask.*)

Var. **epigeios,** Læst. Vet. Ac. Handl., 339, (1822.)
C. stans, Drej. Revis. Crit. Car. 40, (1841.)
C. aquatilis, var. *minor,* Boott, Ill. 163.

From Colorado to the Arctic coast. (*Bailey.*) Arctic sea-coast. (*Richardson.*) In meadows at the mouth of Madeline River, Gaspé coast, Q.; in ditches near Windsor, N. S. Evidently approaching *C. stricta,* but neither young nor old sheaths reticulated; another form named *C. borealis* by Olney, was gathered along the shore of Lake Superior, at Thunder Bay, in 1869. This specimen seems to approach *C. vulgaris* var. *juncella.* (*Macoun.*)

(2603.) **C. stricta,** Lamarck, Dict. De. Bot. III., 387, (1789.)
C. acuta, Pursh, Fl. I., 38, (1814.)
C. angustata, Boott, Hook., Fl. II., 218, (1840.)
C. strictior, Dew., Wood's Cl. Book, 755, (1861.)
C. Virginiana, var. *elongata,* Bœckeler, Linnæa, XL., 432, (1875.)

Common in ditches; growing in thick clumps, especially in the eastern provinces. Newfoundland. (*Reeks.*) Halifax, N.S. (*Sommers, Cat.*) Common in boggy meadows at North Sydney, and Louisburg, Cape Breton; abundant in ditches and bogs at Point Pleasant, Halifax, and Yarmouth, N.S. (*Macoun.*) Glenelg, Guysboro Co., N.S. (*Faribault.*) Richibucto, Kent Co.; Fredericton, Norton, and Salmon River, N.B. (*Fowler, Cat.*) Becscie River, Anticosti. (*Macoun.*) Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Common around Prescott, Ont. (*Billings.*) Vicinity of Hamilton, Ont. (*Logie.*) Common in marshy meadows near Belleville, and at Trenton, and Owen Sound, Ont.; near Lake Ellen, Nipigon River, and along the Kaministiqua, west of Port Arthur. (*Macoun.*) West of Grand Island marsh, Georgian Bay. (*R. Bell.*) Wet river bank, London, Ont. (*Burgess.*) Port Colborne, Lake Erie. (*McGill Coll. Herb.*)

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A remarkable form of this species grows at Campbellford, Northumberland Co., Ont. As usual, it grows in large clumps about three feet high, but instead of the spikes being sessile, they are peduncled, or have scattered perigynia for nearly half their length, which is often from three to four inches. The sheaths are scarcely fibrilose, and many of the perigynia are abortive. I conclude from these characters that it is a hybrid between *C. aquatilis* and *C. stricta.*

Var. **decora.** Bailey, Coult. Bot. Gaz. XIII., 85.

C. aperta, Carey, Gray, Man. Ed. V., 582, (1868.)

Usually smaller and more slender than the species, the basal sheaths not fibrilose; spikes short (seldom over an inch long), sessile or nearly so, very rarely attenuated at the base, spreading; bracts usually conspicuously spreading; scales very sharp, spreading, longer than the perigynia. (*Bailey.*) A very obscure species and evidently not the one figured by Boott. I agree with Prof. Bailey in doubting the accuracy of the eastern *C. aperta.* My specimens, though named by Dewey and Olney, appear to be *C. stricta,* var. *strictior,* Carey; Gray, Man. V., 583, (1868.) (*Macoun.*) Near Richibucto, Kent Co.; and rather common at Salmon River, N.B. (*Fowler, Cat.*) Tobique River, N.B. (*Hay.*) Mer Bleue, near Ottawa. (*Fletcher, Fl. Ott.*) Border of a little lake one mile north of Hooper's Lake, Tudor, North Hastings, Ont.; fifteen miles up the Kaministiqua, west of Port Arthur, Lake Superior. (*Macoun.*) Wet river bank, London, Ont. (*Burgess.*) Specimens collected on the Nachacco River, in northern British Columbia, in 1875, are referred here. I doubt their identity with the eastern specimens, but they are placed here for the present.

(2604.) **C. lenticularis,** Michx., Fl. I., 172, (1803); Hook., Fl. II., 219.

Abundant in the beds of rivers, growing in the crevices of rocks in large tufts. Chiefly found in northern Ontario, and north-eastward. Coast of Labrador, lat. 51° 30′. (*Allen.*) Bass River, Kent Co.; not rare at Salmon River; St. Stephen, N.B. (*Fowler, Cat.*) Amongst rocks, Ste. Anne des Monts River, Gaspé, Q.; on wet rocks in rear of the old saw-mill, Marmora village, Hastings Co.; shore of Gull Lake, Barrie, Addington Co.; abundant from Balsam Lake, the whole length of Gull River, Victoria Co.; very abundant all around Lake Superior, and north up Nipigon River to the Lake. (*Macoun.*) Shallow water, Port Cockburn, Lake Joseph, Muskoka Co., Ont. (*Burgess.*) Michipicotin River, Ont. (*R. Bell.*) Lake Mistassini, N. E. T.; Severn

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River, Keewatin. (*J. M. Macoun.*) Saskatchewan, and northward to Bear Lake. (*Bailey.*) Canada to Mackenzie River. (*Hooker, Fl.*) Methy Portage. (*Richardson.*)

(2605.) **C. acuta,** Linn., Sp. Pl., 1388, (1757.)

C. aperta, var. *divaricata*, Bailey, Bot. Gaz. IX., 119, in part, (1884.)

We have few specimens which we can refer here, but place them mostly under the variety which follows. Sitka. (*Rothr. Alask.*) Lewes River, lat. 62°, N.W.T. (*Dawson.*)

Var. **prolixa,** Hornem. Plantel. Ed. IV.

C. prolixa, Fries. Mant. III., 150, (1835.)
C. aperta, Boott, Hook., Fl. II., 218, (1840.)

Very abundant in low grounds, producing very good hay in numerous places, especially at Cedar Hill, and Nanaimo. Specimens were collected at Cedar Hill, Goldstream, Shawnigan Lake, Qualicum, Mount Arrowsmith, and Sproat Lake, on the west coast of Vancouver Island. (*Macoun.*) In meadows at Victoria, Vancouver Island. (*Fletcher.*)

(2606.) **C.** GLAUCA, Scopoli, Fl. Germ. 455.

Introduced on dry clay banks of the railway cutting just outside of Windsor, N.S. (*Macoun & Burgess.*) On the border of a meadow, in poor soil, London, Ont. (*Burgess.*)

(2607.) **C. torta,** Boott; Tuckerman, Enum. Meth. (1843.)

C. torta, var. *composita*, Porter.

Borders of streams and in wet meadows in the maritime provinces. Halifax, N.S. (*Sommers, Cat.*) Along a small stream at Truro, N.S. (*Macoun & Burgess.*) Salmon Creek, and Gaspereaux River; Petitcodiac, N.B. (*Fowler, Cat.*)

(2608.) **C. salina,** Wahl., Fl. Lapp. 246, (1812.)

C. cuspidata, Wahl. Köngl. Acad. Handl. XXIV., 164, (1802.)
C. stricta, Hook. & Arn. Bot. Beechey's Voy., 131, (1834.)
C. recta, Boott, Hook., Fl. II., 220, (1840.)
C. hæmatolepis, Drej. Revis. Crit. Car. 44, (1841.)

Very abundant in salt marshes in almost every part of Nova Scotia and around the Gulf of St. Lawrence. Newfoundland. (*Reeks.*) Coast of Labrador and about Hudson Bay. (*Bailey.*) Louisburg, and North Sydney, Cape Breton; Truro, Annapolis, Yarmouth and Halifax, N.S. (*Macoun.*) Salt marsh at Molus Bay, Kent Co., N.B. (*Fowler, Cat.*) Salt Lake and English Bay, Anticosti; Cape Rosier, Fox River,

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Grand Etang and Madeline River, Gaspé coast, Q. (*Macoun.*) Mouth of Saguenay River, Q. (*Pringle.*) Ouatchechou, Q. (*St. Cyr.*) Hudson Bay, Labrador, and Kotzebue Sound. (*Hooker, Fl.*)

Var. **mutica,** Wahl. Fl. Lapp. 246, (1812.)
C. lanceata, Dew. Sill. Journ. XXIX., 249, (1836.)
C. reducta, Drej. Revis. Crit. Car. 46, (1841.)
C. salina, var. *minor,* Boott, Ill. 160, in part.
C. salina, var. β., Boott, Hook., Fl. II., 219, (1840.)
Cumberland House, on the Saskatchewan, and Hudson Bay. (*Hooker, Fl.*) Coast of Greenland. (*Lange.*)

Var. ? **robusta,** Bailey, Coult. Bot. Gaz. XIII., 87.
Taller and coarser than the species (two to three feet high), the culm spongy at the base; leaves soft; bracts very leafy, surpassing the culm; spikes heavy, short and thick (usually an inch or less long, and nearly half an inch thick), mostly dense and truncate at the base, somewhat aggregated, the lower short stalked; scales ranging from lanceolate and acute to ovate and obtuse, brown with a white midnerve, longer than the thinner nerveless perigynium. All the perigynia are empty. (*Bailey.*) The specimens were growing in large patches between tides in the bed of Qualicum River, Vancouver Island They were generally covered with water to the height of a foot or more at high tide. I cannot believe that this is a form of *C. salina,* as it is quite distinct from that species in general appearance, but leave it with Prof. Bailey to settle it. Collected July 29, 1887. (*Macoun.*)
Since the above was in type, I have received further information regarding this form from Mr. Arthur Bennett, F.L.S., Croyden, England. The specimens sent to him were forwarded to Kew, and were examined by Mr. C. B. Clarke, who could not match them in Kew herbarium, but suggested *C. pulla,* Good., as a possibility. Later examinations seem to convince Mr. Clarke that this is *C. physocarpa,* Presl, Reliq. Hænk. I., 205. Mr. Bennett thinks, on the other hand, that if Kunth represents correctly Presl's plant, he cannot agree with him, and says, "if this is not *C. physocarpa,* then it is a new species so far as we have material at Kew to go upon, for which I propose the name *C. Macounii* (non Dewey Sill. Journ.) characterized by its extremely (almost wanting) short beak to the perigynia with a smaller base, semi-inflated nerved fruits much shorter than the glumes."

(2609.) **C. ambusta,** Boott, Ill. 64.
C. salina, var. *ambusta,* Bailey, Carex, Cat. (1884.)
Ungava Bay, North Labrador; northern British Columbia; Sitka,

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and Ounalashka. (*Bailey, Carex, Syn.*, 88.) Francis River, lat. 61°; Pelly River, lat. 62°; Lewes River, lat. 62°, N.W.T. (*Dawson.*)

(2610.) **C. subspathacea,** Wormskjold, Fl. Dan. IX., 4, (1818.)

C. Hoppneri, Boott, Hook., Fl. II., 219, (1840.)
C. salina, var. *subspathacea*, Tuckerman, Enum. Meth. 12, (1843.)
C. salina, var. *minor*, Boott, Ill. 160, in part.

Cumberland House and Hudson Bay. (*Hooker, Fl.*) Salt marsh, near Cape Rosier, Gaspé, 1861. (*J. Bell.*) Greenland. (*Lange.*)

(2611.) **C. cryptocarpa,** C. A. Meyer, Mem. Acad. St. Petersb. I., 226, (1831.)

C. Scouleri, Torr. Cyp. 399, (1836.)
C. filipendula, Drej. Revis. Crit. Car. 46, (1841.)
C. salina, Boott, Hook., Fl. II., 219, in part, (1840.)

Salt marshes at Cape Rosier, and Fox River, Gaspé coast. Collected in 1882. (*Macoun.*) Queen Charlotte Islands; and at Lake Karmutzen, Vancouver Island. (*Dawson.*) Near Victoria, Vancouver Island. (*Fletcher.*) Abundant at Oak Bay, near Victoria, at the mouth of Nanaimo River, in marshes at Qualicum, and on the west coast of Vancouver Island, at Alberni; also by a lake near Fort St. James, northern British Columbia. (*Macoun.*) Clemincitty Harbor, and Sitka. (*Hooker, Fl.*) Ounalashka, Sitka, and Kotzebue Sound. (*Rothr. Alask.*) Along Burrard Inlet, at Vancouver city, B.C. (*Prof. Fowler.*) Alaska. (*Meehan.*) Greenland. (*Lange.*)

(2612.) **C. Sitchensis,** Prescott, (1831); Hook., Fl. II., 220.

A very fine and remarkably distinct species, growing in profusion on many parts of the Pacific coast. Along the Fraser River, at Ladner's Landing, B C. (*Fletcher.*) Marshes near Alert Bay, Vancouver Island. (*Dawson.*) In meadows and by lakes and streams; common at Cedar Hill, Goldstream, Somenos, Shawnigan Lake, Nanaimo, Qualicum, Horne Lake, and Alberni, on the west coast of Vancouver Island. (*Macoun.*) Puget Sound, and Sitka. (*Hooker, Fl.*)

(2613.) **C. Barbaræ,** Dew. Bot. Mex. Bound. 231, (1858.)

C. Schottii, Dew. Bot. Mex. Bound. 231, (1858.)
C. Prescottiana, Olney, Bot. King's Exp. V., 369, (1871.)

Wet ground near Victoria, Vancouver Island. (*Fletcher.*) Abundant in wet meadows by lakes and marshes, at Cedar Hill, Goldstream, Chemainus, Nanaimo, Qualicum, and Alberni, Vancouver Island. (*Macoun.*) Shores of Burrard Inlet, Vancouver city, B.C. (*Prof. Fowler.*) Port Etches, Alaska. (*Barclay.*)

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(2614.) **C. maritima,** Müller, Fl. Dan. t. 793; Hook., Fl. II., 219.

C. paleacea, Wahl. Köngl. Acad. Handl. XXIV., 164, (1802.)

Salt marshes around the coasts of the maritime provinces. Newfoundland. (*Reeks.*) Annapolis, N.S. (*Burgess.*) Marshes at Truro, N.S; Salt Lake, Ellis Bay, and Rivière de Brig, Anticosti; Gaspé Basin, and Fox River, Gaspé coast, Q. (*Macoun.*) Bridgetown, N.S. (*Prof. Fowler.*) Salt marshes, Molus River, and Lancaster, N.B. (*Fowler, Cat.*) Rupert House, James Bay. (*J. M. Macoun.*) Hudson Bay. (*Hooker, Fl.*) Temiscouata, St. Lawrence River. (*Pringle.*) Couetatchou-Manicouagan, Q. (*St. Cyr.*)

(2615.) **C. crinita,** Lamarck, Dict. de Bot. III., 393, (1789); Pursh, Fl. I., 38, (1814); Hook., Fl. II., 219, (1840.)

C. crinita, var. *paleacea,* Dew. Sill. Journ. X., 270, (1826.)
C. Mitchelliana, M. A. Curtis, Sill. Journ. XLIV., 84, (1843)
C. crinita, var. *minor,* Boott, Ill. 18.
C. pendula, Sommers, Cat. Nov. Scotia Plants.

Rather uncommon in low meadows and by streams, growing in clumps. Brigus, and Topsail, Newfoundland. (*R. Bell.*) Pictou, N.S. (*McKay.*) Near Bedford, N.S. (*Sommers, Cat.*) By brooks at Truro, and Windsor, N.S. (*Macoun.*) Along rills and brooks, at Kouchibouguac, and Norton, N.B. (*Fowler, Cat.*) St. Sauveur, near Quebec. (*St. Cyr.*) Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Common at Prescott, Ont. (*Billings.*) Abundant in moist places by brooks, Argenteuil Co., Q. (*D'Urban.*) St. Andrews, Montreal. (*McGill Coll. Herb.*) Richelieu Swamp, Q. (*C. F. McCrea.*) Tadousac, Saguenay River, Q. (*A. T. Drummond.*) Rather common in central Ontario, in large tufts at Canniffton, Hastings Co., Ont. (*Macoun.*) Near Hamilton, Ont. (*Logie.*) Low grounds, London, Ont. (*Burgess. Millman.*) Canada to Norway House. (*Hooker, Fl.*)

Var. **gynandra,** Schwein. & Torr., Mon. 360, (1824.)

C. gynandra, Schweinitz, An. Tab. (1823.)

Apparently confined to the eastern provinces. Campbellton, N.B. (*Chalmers.*) Tobique River, N.B. (*Fowler, Cat.*) Grand Vallée, Gaspé coast, Q. (*Macoun.*)

(2616.) **C. podocarpa,** R. Brown, App. Frankl. Narr., Ed. II., 36; Hook., Fl. II., 224.

C. macrochæta, C. A. Meyer, (1830); Hook., Fl. II., 219.
C. spectabilis, Dew. Sill. Journ. XXIX., 248, (1836.)

A very remarkable species and easily distinguished by the long thread-like awns of the scales. Mountains of British America to Alaska.

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(*Bailey.*) Stikine River. (*Cowley.*) Lewes River, lat. 62°, N.W.T. (*Dawson.*) Port Etches, Alaska. (*Barclay.*) Sitka, and Rocky Mountains. (*Hooker, Fl.*) Ounalashka, and Sitka. (*Rothr. Alask.*)

* * Stigmas III.

† *Perigynium beakless or short-beaked, the orifice entire, emarginate, or bidentate.*

‡ *Perigynium smooth.*

(2617.) **C. Magellanica,** Lamarck, Dict. de Bot. III., 385, (1789.)

C. irrigua, Smith; Hook., Fl. II., 224, (1840.)
C. limosa, var. *irrigua,* Wahl. Köngl. Acad. Handl. XXIV, 162, (1803.)
C. limosa, var. *irrigua,* Wahl. Fl. Lap. 243, (1812.)
C. paupercula, Michx, Fl. I., 172, (1803.)
C. lenticularis, Dew. Sill. Journ. VII., 273, (1823.)

In peat bogs, Newfoundland. (*La Pylaie.*) Labrador. (*McGill Coll. Herb.*) In peat bogs near Point Pleasant, and at the head of the North West Arm, Halifax, N.S.; bog near North Sydney Mine, Cape Breton. (*Macoun & Burgess.*) Peat bogs, Kent Co.; Lily Lake, N.B. (*Fowler, Cat.*) Nepisiquit Lake, N.B. (*Hay.*) Salt Lake, Ellis and English bays, Anticosti; Mount Albert, Gaspé, Q. (*Macoun.*) Thunder River, Q. (*St. Cyr.*) All peat bogs near Ottawa; not common. (*Fletcher, Fl. Ott.*) Swamp near Heck's Mills, Prescott, Ont. (*Billings.*) Common in bogs throughout central Ontario, and westward to Red Bay, Lake Huron; and north-westerly to Michipicotin, and Red Rock, and around Port Arthur, Lake Superior. (*Macoun.*) Bogs, London, Ont. (*Burgess. Millman.*) Cranberry marsh, Port Colborne, Lake Erie. (*McGill Coll. Herb.*) Lake Mistassini, N.E.T. (*J. M. Macoun.*) Swamps on Mount Mark, Vancouver Island. (*Macoun.*) Norway House, Lake Winnipeg. (*Hooker, Fl.*)

(2618.) **C. rariflora,** Smith, Engl. Bot. t. 2516; Hook., Fl. II., 224.

C. limosa, var. *rariflora,* Wahl. Köngl. Acad. Handl. XXIV., 162, (1803.)

Salt Lake, Anticosti, in a peat bog, 1883. (*Macoun.*) Ouatchechou, Q. (*St. Cyr.*) South Twin Island, James Bay. (*J. M. Macoun.*) Labrador. (*Miss Brodie* vide, *McGill Coll. Herb.*) Labrador. (*Allen. Storer.*) Lake Mistassini; Fort Franklin, Mackenzie River, lat. 64°. (*Hooker, Fl.*) Greenland. (*Lange.*)

(2619.) **C. limosa,** Linn. Sp. Pl. 977, (1753); Hook., Fl. II., 224.

C. laxa, Dew. Sill. Journ. XXVI., 376, (1834.)
C. limosa, var. *Painei,* Dew. Sill. Journ. (2d Ser.) XXIX., 71.

Peat bogs, from the Atlantic to the Pacific, especially northward.

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In the "Old Moat" at Louisburg, Cape Breton; in bogs at the head of North West Arm, Halifax, N.S. (*Macoun.*) Peat bogs, Richibucto, Bass River, N. B. (*Fowler, Cat.*) Kendrick's Lake, N. B., 1882. (*Vroom.*) Miscou Island, N.B. (*Hay.*) Trout Lake, Charlotte Co.; Portage Lake, Westmoreland Co., N.B. (*Brittain.*) Salt Lake, Anticosti; Mount Albert, Shickshock Mountains, Gaspé, Q. (*Macoun.*) Bogs, near Ottawa. (*Fletcher, Fl. Ott.*) Peat bog, five miles north of Colborne, Northumberland Co.; marsh, Red Bay, Lake Huron; and marsh at Red Rock, Lake Superior; also at the mouth of the Kaministiqua, near Port Arthur, Thunder Bay. (*Macoun.*) Mossy bog, London, Ont. (*Burgess. Millman.*) Marsh at Port Colborne. (*McGill Coll. Herb.*) Moose Factory, James Bay. (*Cottar & Dr. Hayden.*) Hudson Bay, near Fort Severn. (*J. M. Macoun.*) Not uncommon in peat bogs and marshes, from the Kananaskis westward through the Rocky Mountains to Roger's Pass, in the Selkirk Mountains, B.C.; bogs near McLeod's Lake, B.C., lat. 55°. (*Macoun.*) Rocky Mountains; Sitka, and North West coast. (*Hooker, Fl.*) Sitka. (*Rothr. Alask.*)

Var. **stygia,** Bailey, Carex, Syn. 95, (1886.)

C. stygia, Fries. Mant. III., 141.
C. rariflora, Rothrock, Pl. Alask. 457. (?)

Spikes mostly thicker and more drooping than in the species; scales very black, longer pointed. Alaska and Shumagan Island. (*Bailey.*) Ounalashka, and Bay of Schischmareff. (*Rothr. Alask.*) We place here the *C. rariflora* of Rothrock in Dall's Alaska.

(2620.) **C. Raynoldsii,** Dew. Sill. Journ. XXXII., 39, (1837.)

C. Lyallii, Boott, Ill. 150, t. 483.

Mountains of Montana, and Washington territory. (*Bailey.*) Will likely be found north of lat. 49°, B.C.

(2621.) **C. stylosa,** C. A. Meyer, Act. Acad. St. Petersb. I., 222, (1831.)

C. nigritella, Drejer. Revis. Crit. Car. 32, (1841.)
C. Parryana, Hook., Fl. II., 216, in part, (1840.)

Fox Harbor, Labrador. (*Allen.*) Sitka, and Ounalashka. (*Rothr. Alask.*) Greenland. (*Lange.*)

(2622.) **C. Tolmiei,** Boott, Hook., Fl. II., 224, (1840.)

C. vulgaris, Olney, Proc. Am. Acad. 407, (1872.)

South Kootanie Pass, Rocky Mountains. (*Dawson.*) The specimens referred here are identical with those of Suksdorf, gathered on Mount Adams, Washington Territory, 1883.

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(2623.) **C. livida,** Willd. Sp. Pl. IV., 285, (1805); Hook., Fl. II., 224.

C. limosa, var. *livida*, Wahl. Köngl. Acad. Handl. XXIV., 162, (1802.)
C. Gayana, Dew. Sill. Journ. XXV., 141, (1834.)
C. livida, var. *radicalis*, Paine, Cat. Oneida Co. Plants.

Peat bog at Louisburg, Cape Breton. (*Macoun & Burgess.*) Bogs, Salt Lake, Anticosti; in a beaver meadow, Huntingdon, Hastings Co.; Kiladar, Addington Co.; marsh, Chicken Bay, Lake Huron; in a marsh at Morley, Rocky Mountains; in marshes along Beaver Creek, near Roger's Pass, Selkirk Mountains. (*Macoun.*) Hudson Bay to Cumberland House and Fort Carleton, and thence to the Rocky Mountains; Sitka, and North West coast. (*Hooker, Fl.*) Labrador, and Lake Superior, and high northward. (*Bailey.*) Sitka. (*Rothr. Alask.*) Arctic sea-coast. (*Richardson.*)

(2624.) **C.** PANICEA, Linn. Sp. Pl. 977, (1753.)

Wet meadows, Bass River, Kent Co., N.B. (*Fowler, Cat.*) In meadows, two miles from Windsor, N.S.; along the "pipe line" for the water supply; also in marshy meadows around the ruins of Louisburg, Cape Breton. (*Macoun & Burgess.*) As in both cases the species was found in cultivated ground, we consider it introduced. The dark purple (Louisburg) or purple margined (Windsor) scale, distinguish it from every form of the next.

(2625.) **C. tetanica,** Schkuhr. Riedgr. Nachtr, 68, (1806); Pursh, Fl. I., 43.

C. refracta, Willd. Sp. Pl. IV., 297, in part, (1805.)
C. Woodii, Dew. Sill. Journ. II., 487, (1846.)
C. panicea, var. *tetanica*, Olney, Exsicc. I., 23, (1870.)
C. panicea, var. *Woodii*, Olney, Exsicc. II., 27, (1871.)
C. panicea, var. *Bebbii*, Olney, Exsicc. I., 22, (1870.)
C. Meadii, var. *Bebbii*, Arthur, Contr. Fl. Iowa, VI.

Culm slender; leaves narrow, green; spikes pale, mostly greenish, mostly thin and loosely flowered, attenuated below. (*Bailey.*) Sparingly in a meadow east of Belleville, Ont.; abundant in Manitoba and westward; especially common in low meadows east of Brandon. (*Macoun.*)

(2626.) **C. Meadii,** Dew. Sill. Journ. XLIII., 90, (1842.)

C. panicea, var. *Meadii*, Olney, Exsicc. I.. 24, (1870.)
C. panicea, var. *Canbyi*, Olney, Exsicc. II., 24, (1871.)
C. tetanica, var. *Meadii*, Bailey, Carex, Syn. 118, (1886.)

Our specimens of this species are so different from those of *C. tetanica* that we consider them specifically distinct. File Hills, and Qu'Appelle Valley, Assiniboia. (*Macoun.*)

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(2627.) **C. vaginata,** Tausch. Bot. Zeit. 557, (1821.)
C. panicea, var. *sparsiflora*, Wahl. Fl. Lapp. 236, (1812.)
C. phæostachya, Smith; Hook., Fl. II., 226, (1840.)
C. sparsiflora, Steud. Nom. Bot. 296, (1840.)
C. vaginata, var. *alto-caulis*, Dew. Sill. Journ.
C. panicea, var. *refacta*, Olney, Exsicc. I., 24, (1870.)

Northern Labrador. (*Turner.*) Swampy wood, Salt, Lake, Anticosti; Mount Albert, Shickshock Mountains, Gaspé, Q. (*Macoun.*) Harbor Island, Mingan, Q. (*St. Cyr.*) Recollet Swamp, Montreal. (*C. F. McCrea.*) Abundant in cedar swamps at Belleville, and westward throughout northern and north-westerly Ontario; around Lake Superior and northerly to Lake Nipigon, and westerly to Point du Chein, Man. (*Macoun.*) Lake Mistassini, N.E.T. (*J. M. Macoun.*) In spruce and other swamps, from Morley westward through the Rocky Mountains to Donald, in the Columbia Valley; in swamps throughout northern British Columbia, 1875. (*Macoun.*) Fort Norman, Mackenzie River; Rocky Mountains. (*Hooker, Fl.*)

(2628.) **C. granularis,** Muhl. (1806); Hook., Fl. II., 226.
C. chlalaros, Steud. Cyper. Plant, 231, (1855.)
C. Haleana, Olney, Exsicc. III., 14, (1871.)

Abundant in wet meadows in Ontario; wet grounds, Bass River, Kent Co.; college grounds, Fredericton; and Sussex, N.B. (*Fowler, Cat.*) Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Everywhere common around Prescott, Ont. (*Billings.*) Very abundant in low wet meadows and thickets throughout central Ontario; meadows, Owen Sound; along the Kaministiqua, at Fort William, and twenty miles up that stream; Blackwater River, Lake Nipigon. (*Macoun.*) Swamp, London, Ont. (*Burgess. Millman.*) Damp prairies, from Winnipeg west to Brandon, Man. (*Macoun.*) Quebec. (*Hooker, Fl.*)

(2629.) **C. Crawei,** Dew.; Torr. Bot. N. York II., 408, (1843.)
C. heterostachya, Torr. Sill. Journ. (2d. Ser.) II., 248, (1846.)
C. Crawei, var. *heterostachya*, Dew. Sill. Journ. (2d. Ser.) XLII., 4, (1866.)

Wet gravel, South West Point, Anticosti. (*Macoun.*) Shore of St. Lawrence, Montreal. (*C. F. McCrea.*) Field near Fort Wellington, Prescott, Ont. (*Billings.*) Wet gravel, Massassaga Point, near Belleville, Ont.; on wet sand, Presqu'ile Point, Lake Ontario; on wet sand at Owen Sound, and in marshy ground, Red Bay, Lake Huron; wet gravel, Assiniboine Rapids, east of Brandon, Man. (*Macoun.*)

(2630.) **C. Torreyi,** Tuckerman, Enum. Meth. 21, (1843.)
C. pallescens, Hook., Fl. II., 226, (1840.)
C. abbreviata, Boott, Linn. Trans. XX., 141, (1845.)

Abundant in many parts of western Manitoba, growing in clumps,

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and having the general appearance of *C. pallescens*, but easily distinguished by its strongly nerved perigynium. Specimens from Portage la Prairie, Totogan, Grand Valley, Brandon, and File Hills, Man. (*Macoun.*) Souris River, and Turtle Mountain, Man. (*Burgess. Millman.*) Carleton House, on the Saskatchewan. (*Hooker, Fl.*)

(2631.) **C. pallescens,** Linn. Sp. Pl. 977, (1753.)

C. undulata, Kunze, Suppl. Riedgr. 23.
C. pallescens, var. *undulata*, Gray, Man. Ed. V., 587, (1868.)

Quite common in damp meadows at Truro, Halifax, and Annapolis, N.S. (*Macoun & Burgess.*) Pictou Co., N.S. (*McKay.*) Bass River, Kent Co.; Aroostook Falls, and Carleton Co., N.B. (*Fowler, Cat.*) Dalhousie, N.B.; and Ottawa, Ont. (*Fletcher.*) Meadows, Gaspé Basin, Gaspé Co., Q.; very abundant in meadows in the rear of St. Mary's Village, Sault Ste. Marie. (*Macoun*)

(2632.) **C. conoidea,** Schkuhr. Riedgr. Nachtr. 67, (1806); Pursh, Fl. I., 43, (1814); Hook., Fl. II., 226.

C. granularioides, Schweinitz, An. Tab. (1823.)
C. tetanica, Schwein. & Torr., Cyp. 347, (1836.)
C. Illinœnsis, Dew. Sill. Journ., (2d. Ser.) VI., 245, (1848.)

Damp meadows at Annapolis, and Halifax, N.S. (*Macoun & Burgess.*) St. Stephen, N.B. (*Vroom.*) Belleisle, N.B. (*Brittain.*) Wet meadows, close to the Ferry House, opposite Belleville, Ont., and in pastures east of that city. (*Macoun.*)

(2633.) **C. grisea,** Wahl. Köngl. Acad. Handl. XXIV., 154, (1802.)

C. laxiflora, Schkuhr, Riedgr. Nachtr. 69, (1805.)
C. grisea, var. *minor*, Olney, Hall's Pl. Tex. 26, (1873.)

Apparently rare in Canada, only observed in south-western Ontario. Damp thickets, Port Dover Junction, Elgin Co., Ont. (*Macoun.*)

(2634.) **C. oligocarpa,** Schkuhr, Riedgr. Nachtr. 67, (1805.)

C. subuniflora, Steud. Cyper. Plant, 234, (1855.)
C. oligocarpa, var. *Sartwelliana*, Dew. Sill. Journ. (2d. Ser.) V., 176, (1848.)

Not rare on exposed, grassy hillsides, near the shores of Lakes Ontario and Erie; rocky hill near Picton, Prince Edward Co.; open woods, above Port Hope, Ont; also along Lake Erie, near Fingal, Ont. (*Macoun.*) Vicinity of Ottawa; rare. (*Fletcher, Fl. Ott.*) Belleisle, and Petitcodiac; Long Island, in the Kennebeccasis, N.B. (*Brittain.*) It is probable that all Brittain's specimens are *C. conoidea*, as those gathered at Belleisle, now in our herbarium, are of that species. (*Macoun.*)

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(2635.) **C. Hitchcockiana,** Dew. Sill. Journ. X. 274, (1826.)

C. oligocarpa, var. *major,* Torr. Bot. N. York II., 406, (1843.)

Rocky woods, apparently rare in Ontario, but more northern than the preceding species. Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) In half cleared lands, Kennebec, Addington Co.; Huntingdon, Hastings Co.; and Seymour, Northumberland Co., Ont.; Port Stanley, and Fingal, Elgin Co., Ont. (*Macoun.*)

(2636.) **C. laxiflora,** Lamarck, Dict. de Bot. III., 392, (1789); Hook., Fl. II., 226.

C. striatula, Michx., Fl. I., 173, (1803.)

C. anceps, Schwein. & Torr. Car. Mon. 343, in part, (1824.)

C. ignota, Dew. Sill. Journ. VIII., 348, (1849.)

As many collectors have not separated the varieties from each other, we place all references under the species, except where we have seen the specimens, or they have been separated by the collector. Newfoundland. (*Reeks.*) Several varities and forms of this exceedingly variable plant are found, but they have not been worked out. (*Fowler, Cat.*) Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Damp woods at Belleville, Ont.; also Amherstburgh, Lake Erie. (*Macoun.*) Woods near Hamilton, Ont. (*Logie.*) Neighborhood of London, Ont. (*Burgess. Millman.*) Quite common at Prescott, Ont. (*Billings.*)

Var. **intermedia,** Boott, Ill. 37.

C. heterosperma, Wahl. Köngl. Acad. Handl. XXIV., 151, (1802.)

C. anceps, Muhl.; Hook., Fl. II., 226, (1840.)

C. anceps, var. *angustifolia,* Dew., Wood's Bot. 423, (1845.)

C. laxiflora, var. *blanda gracillima,* Boott, Ill. 38.

Apparently our commonest form. Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Common in open woods, from Carleton Place westward through central Ontario to Amherstburgh, on Lake Erie, and northwesterly to Red Rock, Lake Superior. (*Macoun.*) Vicinity of London, Ont. (*Burgess. Millman.*) Canada to Carleton House, on the Saskatchewan. (*Hooker, Fl.*)

Var. **striatula,** Carey, Gray, Man. Ed. II., 524, (1856.)

C. conoidea, Muhl. Descr. Gram. 248, (1817.)

C. blanda, Dew. Sill. Journ. X., 45, (1826.)

C. anceps, var. *striatula,* Carey, Gray, Man. Ed. I., 554, (1848.)

C. anceps, var. *blanda,* Hook., Fl. II., 226, (1840.)

Not nearly so common as the preceding. Apparently more southern in its range. Newfoundland. (*La Pylaie.*) Stewart's Bush, and Billings Bridge, Ottawa. (*Fletcher, Fl. Ott.*) Not common in woods at Belleville, Ont.; Queenston Heights, near Niagara Falls. (*Macoun.*) Low woods, London, Ont. (*Burgess. Millman.*)

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Var. **atifolia,** Boott, Ill. 38.

Rich woods, Sudbury Junction, C. P. Ry., Ont.; common in woods around Belleville, and westward through central Ontario to Port Stanley, and Amherstburgh, on Lake Erie. (*Macoun.*) Vicinity of Hamilton, Ont. (*Logie.*) Grassy woods, London, Ont. (*Burgess. Millman.*) Hull, near Ottawa. (*Fletcher, Fl. Ott.*)

Var. **patulifolia,** Carey, Gray, Man. Ed. II., 524, (1856.)

C. plantaginea, Schkuhr, Riedgr. Nachtr. 65, (1805.)
C. anceps, var. *patulifolia,* Dew. Wood's Bot. 423, (1845.)
C. laxiflora, var. *plantaginea,* Boott, Ill. 37.

Only found on McNab's Island, in Halifax Harbor. Easily distinguished from var. *latifolia* by the almost total absence of nerves, and nearly straight beak of the perigynium. (*Macoun.*)

(2637.) **C. Hendersoni,** Bailey, Carex, Syn. 115, (1886.)

C. laxiflora, var. *plantaginea,* Olney, Proced. Am. Acad. (1872.)

Easily distinguished from any form of *C. laxiflora* by its very large perigynium. The western representative of the *Laxiflorœ.* Lower Fraser River, lat. 49°. (*Dr. Lyall.*) Not uncommon in open woods at Nanaimo, Qualicum, and Alberni, Vancouver Island. (*Macoun.*)

(2638.) **C. retrocurva,** Dew., Wood's Bot. 423, (1845.)

Apparently rare in Canada. Vicinity of Hamilton, Ont. (*Logie.*) Grassy woods at Amherstburgh, Lake Erie. (*Macoun.*) Border of a ravine at London, Ont. (*Burgess. Millman.*)

(2639.) **C. digitalis,** Willd. Sp. Pl. IV., 298, (1805.)

C. oligocarpa, Hook., Fl. II., 226, (1840.)
C. Van-Vleckii, Schweinitz, An. Tab. (1823.)
C. podostachys, Steud. Cyper. Plant, 232, (1855.)

Open grassy woods and borders of ravines at Port Stanley, Elgin Co., and on Queenstown Heights, near Niagara; in a field near the Big Swamp, Murray, Northumberland Co., and in woods, Tudor, Hastings Co., Ont. (*Macoun.*) Vicinity of Hamilton, Ont. (*Logie.*)

(2640.) **C. platyphylla,** Carey, Sill. Journ. (2d. Ser.) IV., 23, (1847.)

Open grassy woods, not rare in Ontario. Near Montreal. (*C. F. McCrea.*) King's Mountain, Chelsea, Q. (*Fletcher, Fl. Ott.*) Rich, rocky woods, common around Belleville, and westward through central Ontario to Owen Sound, Georgian Bay. (*Macoun.*) Port Colborne, Lake Erie. (*McGill Coll. Herb.*) Vicinity of Hamilton, Ont. (*Logie.*)

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(2641.) **C. plantaginea,** Lamarck, Dict. de Bot. III., 392, (1789); Hook., Fl. II., 226; Michx., Fl., I., 173; Pursh, Fl. I., 42.

C. latifolia, Wahl. Köngl. Acad. Handl. XXIV., 156, (1802.)

On the slopes of ravines, and in cool woods throughout Ontario. St. John River, between Florenceville and Andover, N.B. (*Brittain.*) Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Miriwin's Woods, near Prescott, Ont. (*Billings.*) Abundant in ravines at Belleville, and westward throughout Ontario to Owen Sound, Georgian Bay. (*Macoun.*) Grand Island, Georgian Bay. (*R. Bell.*) Low woods, London, Ont. (*Burgess. Millman.*) Norway House, north end of Lake Winnipeg. (*Hooker, Fl.*)

(2642.) **C. eburnea,** Boott, Hook., Fl. II., 226, (1840.)

C. alba, Dew. Sill. Journ. VII., 266, (1824.)
C. alba, var. *setifolia*, Dew. Sill. Journ. XI., 316, (1826.)
C. paupercula, Torr. Cyp. 415, (1836), (non Michx.)

Not uncommon on dry limestone shingle, along rivers and lakes. Tobique Narrows, N.B. (*Brittain.*) Dry rocks, Rivière de Brig, Anticosti. (*Macoun.*) Mingan River, Q. (*St. Cyr.*) Common in all rocky woods, Ottawa. (*Fletcher, Fl. Ott.*) On rocky banks of the Moira, at Belleville; banks of Trent, above Trenton, and westward throughout north-western Ontario, on rocky banks, to Port Arthur, Thunder Bay. (*Macoun.*) River banks, London, Ont. (*Burgess. Millman.*) Point aux Pins, Lake Erie; and Saugeen, Lake Huron. (*Burgess.*) Point Wilkins, Lake Winnipegoosis, Man.; rather rare on gravelly banks, from Morley westward through the Rocky Mountains to Donald, in the Columbia Valley, B.C. (*Macoun.*) Cedar Lake, near Cumberland House; Fort Norman, on the Mackenzie River; and Rocky Mountains, lat. 54°–56°. (*Hooker, Fl.*)

(2643.) **C. pedunculata,** Muhl. (1805); Hook., Fl. II., 217.

Cool shady woods and in swamps. Petitcodiac, and Havelock; Red Bank, and Salmon River; St. Stephen; Nashwaaksis, N.B. (*Fowler, Cat.*) Woods at Salt Lake, and English Bay, Anticosti; in abundance, along the Gaspé coast, Q. (*Macoun.*) Island of Orleans. (St. Cyr.) In a swamp, half way between Montreal and the Recollet Swamp. (*C. F. McCrea.*) Between Gate and St. Jean lakes, Wentworth, Argenteuil Co., Q. (*D'Urban.*) Very common in damp woods, Ottawa. (*Fletcher, Fl. Ott.*) Miriwin's Wood's, near Prescott, Ont. (*Billings.*) Carleton Place, and westward through Ontario to the west side of Lake Superior, at Point Meuron, Kaministiqua River. (*Macoun.*) Port Colborne, Lake Erie. (*McGill Coll. Herb.*) Vicinity of Hamilton, Ont. (*Logie.*) Damp woods, London, Ont. (*Burgess. Millman.*) Cum-

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berland House, and Norway House, and Rocky Mountains. (*Hooker, Fl.*) Rainy Lake, and Winnipeg River. (*Richardson.*)

‡‡ *Perigynium pubescent.*

(2644.) **C. concinna,** R. Br. (1823); Hook., Fl. II., 223.

C. ornithopoda, Torr. Cyp., 412, (1836.)

Lake Mistassini, N.E.T. (*J. M. Macoun.*) Ste. Geneviève Island, Q. (*St. Cyr.*) Shores of Lake Nipigon, Ont.; amongst rocks at Manitoba House, Lake Manitoba, Pipestone Creek, Man.; common from Morley westward through the Rocky Mountains to Roger's Pass, Selkirk Mountains; Cache Creek, and Clinton, and northward to McLeod's Lake lat. 55°, B.C. (*Macoun.*) Cumberland House, on the Saskatchewan, to Mackenzie River; Rocky Mountains. (*Hooker, Fl.*)

(2645.) **C. melanocarpa,** Chamisso; Bailey, Carex, Syn. 120, (1886.)

St. Lawrence Island, off Alaska. (*Rothr. Alask.*)

(2646.) **C. Richardsoni,** R. Br. (1823); Hook., Fl. II., 223.

Newfoundland. (*Reeks.*) Dry thickets east of Belleville; also near Canniffton, and a little, east of the railway bridge, Trenton, Hastings Co., Ont.; on dry grassy hillsides around Morley, and westward through the Rocky Mountains to Donald in the Columbia Valley, B.C.; mountain summit at Spence's Bridge, and along the Telegraph Trail, lat. 54°, B.C. (*Macoun.*) Norway House, and Cumberland House; Rocky Mountains, and North West coast. (*Hooker, Fl.*)

(2647.) **C. Pennsylvanica,** Lamarck, (1789); Hook., Fl. II., 223; Pursh, Fl. I., 40, (1814.)

C. marginata, Willd. Sp. Pl. IV., 261, (1805.)
C. lucorum, Willd. Hort. Berol. Suppl. 63, (1809.)

Dry knolls in woods between Richibucto and Molus River; not rare at Salmon River, N.B. (*Fowler, Cat.*) St. Stephen, N.B. (*Vroom.*) Petitcodiac, N.B. (*Brittain.*) Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Chalk River, Renfrew Co., and westward throughout Ontario in open woods to Owen Sound on the Georgian Bay. (*Macoun.*) Common in woods at Prescott, Ont. (*Billings.*) Vicinity of Hamilton, Ont. (*Logie.*) Komoka, Ont. (*Burgess.*) London, Ont.; Emerson, Man. (*Burgess. Millman.*) Saskatchewan River, at Cumberland House, and at Lake Winnipeg. (*Richardson.*) Souris Valley, Man. (*Dawson.*) Abundant in thickets throughout Manitoba and westward on the open prairie; rather common on dry slopes at Morley and extending west-

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ward in the Rocky Mountains to Canmore; not uncommon in dry thickets at Yale, B.C.; grassy woods at Cedar Hill, and throughout the southern part of Vancouver Island to Qualicum. (*Macoun.*) Vicinity of Victoria, Vancouver Island. (*Fletcher.*) British America to the Rocky Mountains. (*Hooker, Fl.*) The west coast specimens have much darker scales, and in most cases the lower spikelet is subtended by a green bract.

(2648.) **C. varia,** Muhl. (1806); Hook., Fl. II., 223; Pursh, Fl. I., 40, (1814.)

C. varia, var. *pedicillata*, Dew. Sill. Journ. XI., 163, (1827.)
C collecta, Dew. Sill. Journ. XI., 314. (1827.)
C. Pennsylvanica, var. *Muhlenbergii*, Gray, Gram. & Cypr. 410, (1836.)
C. Pennsylvanica, Torr. Cyp. 410, (1836.)
C. varia, var. *minor*, Boott, Ill. 97.

Rather common in woods at Truro, Annapolis, and Canso, N.S. (*Macoun.*) Halifax, and Pirate's Cove, N.S. (*Burgess.*) Dry knolls in woods at Bass River, and at Fredericton Junction; rather common at Salmon River, N.B. (*Fowler, Cat.*) Plains of Abraham, Q. (*St. Cyr.*) Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Common at Prescott, Ont. (*Billings.*) Rocky ravines, Gibson's Mountain, and Picton, Prince Edward Co.; Shannonville, and Trenton, Hastings Co., and westward to Owen Sound, and seven miles up the Kaministiqua, west side of Lake Superior. (*Macoun.*) Vicinity of Hamilton, Ont. (*Logie.*) Woods, London, Ont. (*Burgess. Millman.*) British America. (*Hooker, Fl.*)

(2649.) **C. Emmonsii,** Dew.; Torr. Cyp. 411, (1836.)

C. alpestris, Dew. Sill. Journ. VII., 268, (1824.)
C. Davisii, Dew. Sill. Journ. X., 279, (1826.)
C. Novæ-Angliæ, var. *Emmonsii*, Carey, Gray, Man. Ed. I., 556, (1848.)
C. leucorum, var. *Emmonsii*, Chapm. Flora, 539, (1860.)
C. Emmonsii, var. *elliptica*, Boott, Ill. 97.
C. varia, var. *minor*, Hook., Fl. II., 223, (1840.)

McNab's Island, Halifax Harbor, and Windsor, N.S. (*Macoun.*) Dry bank near the Manse, Blackville; Petitcodiac; Salmon River, N.B. (*Fowler, Cat.*) St. John, N.B. (*Burgess.*) Montreal Mountain. (*C. F. McCrea.*) King's Mountain, near Chelsea, Q.; and at Rockcliffe, Ottawa. (*Fletcher, Fl. Ott.*) Chalk River, Renfrew Co., and westward throughout Ontario to Lake Erie, at Port Stanley; and northwesterly to Lake Nipigon, north of Lake Superior. (*Macoun.*) Rocky woodlands, west of Brockville, Ont. (*Billings.*) Vicinity of Hamilton, Ont. (*Logie.*) Woods, London, Ont. (*Burgess. Millman.*) Quesnel, and McLeod's Lake, lat. 55°, northern British Columbia. (*Macoun.*) British America to Rocky Mountains. (*Hooker, Fl.*)

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(2650.) **C. Novæ-Angliæ,** Schweinitz, An. Tab. (1823.)

Rather more northern in its range than *C. Emmonsii*, and often very like it in general appearance, the purple-margined scale not always being a sure guide. Damp woods, Truro; Point Pleasant, and McNab's Island, Halifax Harbor, N.S. (*Macoun & Burgess.*) Rocky points, Gaspé coast, Q. (*Macoun.*) St. John, Petitcodiac, and Chipman, N.B. (*Fowler, Cat.*) Sudbury Junction, northern Ontario, and on rocks ten miles south of Fort William, Lake Superior; Telegraph Trail, lat. 54°, B.C.; summit of Mount Arrowsmith, Vancouver Island, alt. 5,500 feet. (*Macoun.*) Lake Lindeman, Lewes River. (*Schwatka.*) Arctic seacoast, and Methy Portage. (*Richardson.*)

Var. **deflexa,** Bailey, Carex, Syn. 124, (1886.)

The specimens referred here are distinguished from the species by the deflexed beak of the perigynium, which has also a purple spot on the inside of the bend. Sheaths reticulated at the base. Grassy thickets, McLeod's Lake, lat. 55°, northern British Columbia. (*Macoun.*)

Var. **Rossii,** Bailey, Bot. Gaz. X., 207, (1885.)

C. Rossii, Boott, Hook., Fl. II., 222, (1840.)

On elevated snow-slides, and grassy margins of thickets, from Castle Mountain to Hector, Rocky Mountains; Yale Mountain, B.C.; rocky fields at Cedar Hill, Gordon Head, Horne Lake, and Nanaimo, Vancouver Island. (*Macoun.*) Rocky Mountains, and North West coast. (*Hooker, Fl.*) Telegraph Creek, lat. 58°, B.C. (*Dawson.*)

(2651.) **C. umbellata,** Schk. (1801); Pursh, Fl. I., 44; Hook., Fl. II., 222.

C. umbellata, var. *ricina*, Dew. Sill. Journ. XI., 317, (1826.)

Not uncommon, chiefly on sandy soil, from the Atlantic to the Pacific. Hillsides at Truro, and on rocks and sand, Point Pleasant, Halifax, N.S. (*Macoun & Burgess.*) Rocky ground, near the Manse at Blackville; Red Bank, and Petitcodiac, N.B. (*Fowler, Cat.*) Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Sand hills, Chalk River, Renfrew Co.; Oak Hills, Hastings Co.; on rocks at Otter Head, Lake Superior; near Lake Ellen, Nipigon River. (*Macoun.*) British America to Rocky Mountains. (*Hooker, Fl.*) Lakes Superior and Huron; Methy Portage, and at Forts Chipweyan and Simpson. (*Richardson.*)

Var. **brevirostris,** Boott, Ill. 99.

C. globosa, W. Boott, Bot. Calif. II., 246, in part, (1880.)

Rather common in tufts on rocky banks, from Morley westward in the Rocky Mountains to Castle Mountain; dry slopes at Yale, and Jackass Mountain, B.C. (*Macoun.*)

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(2652.) **C. pubescens,** Muhl. (1805); Pursh, Fl. I., 42; Hook., Fl. II., 223.

Meadows, and borders of moist woods. Newfoundland. (*Reeks.*) Petitcodiac, N. B. (*Fowler, Cat.*) Stewart's Bush, near Ottawa. (*Fletcher, Fl. Ott.*) Rather rare near Prescott, Ont. (*Billings.*) Meadows between Belleville and Trenton, Hastings Co.; near Wooler, Northumberland Co., Ont. (*Macoun.*) Rich low woods, London, Ont. (*Burgess. Millman.*)

‡ ‡ *Beak of perigynium more or less elongated.*
* *Beak emarginate or obliquely truncate.*

(2653.) **C. scabrata,** Schweinitz, An. Tab. (1823); Hook., Fl. II., 222.

Wet meadows and around springs at Annapolis, and Windsor, N.S. (*Macoun.*) Wet grounds, Bass River, Kent Co.; Norton, and Campbellton, N.B. (*Fowler, Cat.*) Nepisiquit Lake, N.B. (*Hay.*) Near Quebec. (*Cleghorn.*) Borders of springs in woods and swamps at Brighton, and Port Hope, Ont.; Jones Falls, Owen Sound, and at Port Stanley, Lake Erie. (*Macoun.*) Near London, Ont. (*Burgess.*) Vicinity of Hamilton, Ont. (*Logie.*)

(2654.) **C. arctata,** Boott, Hook., Fl. II., 227, (1840.)
C. sylvatica, Dew. Sill. Journ. X., 40, (1826.)

Abundant in meadows and thickets, and in open forest. Margin of dry woods beside the Manse, Bass River, Kent Co.; rather common at Salmon River; St. John and various places in Wesmoreland Co., N.B. (*Fowler, Cat.*) Island of Orleans, Q. (*St. Cyr.*) Sugar Bush Lake, Montcalm Co., Q. (*D'Urban.*) St. Andrews, near Montreal. (*McGill Coll. Herb.*) Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Quite common in dry woods at Belleville, Ont., at Grafton and Queenston Heights, and westward to London, Ont. (*Macoun.*)

Var. **Faxoni,** Bailey, Coult. Bot. Gaz. XIII., 87.

Spikes shorter than in the species, usually short-peduncled, erect or nearly so, much more densely flowered, part of them usually contiguous at the top of the culm, rendering the shorter staminate spike inconspicuous; perigynium usually much larger. (*Bailey.*) Lake Mistassini, N.E.T. (*J. M. Macoun.*) Common at Belleville, and westward through the northern part of Ontario to Nipigon River, north of Lake Superior and south-west to Kakabeka Falls, west of that lake. This is evidently the northern form, and is quite distinct in appearance from the species. Many of the eastern references very likely belong here. (*Macoun.*)

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C. arctata x flexilis, Bailey.

C. Knieskernii, Dew. Sill. Journ. 2d. Ser. II., 247, (1846.)

I agree with Prof. Bailey in believing that this is a hybrid between *C. arctata* and *C. flexilis*. Where I gathered the specimens at Kakabeka Falls, on the Kaministiqua, thirty miles from Fort William, Lake Superior, both of these species were found growing in profusion. Specimens of *C. flexilis*, sent from Tobique Lake, N.B., by Wetmore, contained a fine clump of *C. Knieskernii*. It is just possible that after all it is a lax form of *C. flexilis*, as it certainly approaches that species very closely.

(2655.) **C. flexilis,** Rudge, Linn. Trans. VII., 98, (1804.)

C. blepharophora, Gray, Ann. N. Y. Lyc. III., 237, (1836.)

Newfoundland. (*Rudge.*) Near Weldford Station; Red Bank Creek, and Tobique River; common at Petitcodiac, N.B. (*Fowler, Cat.*) Jupiter River, Anticosti; Falls of Ste. Anne des Monts, Gaspé Co., Q. (*Macoun.*) Dartmouth River, Gaspé Basin, Gaspé Co., Q. (*J. Bell.*) Red Bay, Lake Huron; Nipigon House, Lake Nipigon; abundant at Kakabeka Falls, at Current River, and Otter Head, Lake Superior. (*Macoun.*) Lake Mistassini, N.E.T. (*J. M. Macoun.*)

(2656.) **C. Assiniboinensis,** W. Boott, Bot. Gaz. IX., 91, (1884.)

A very beautiful and distinct species well described by Boott. Perigynium few-ribbed towards the base, hairy, gradually contracted into a very long slender beak, which is white and membranous at the tip; scale white, awl-shaped, the lower ones awned and longer than the perigynium, the others about the same length. In thickets at the Assiniboine Rapids, east of Brandon, and in the Grand Valley, leading to Rapid City, 1879; on a dry limestone point at the "Narrows" of Lake Manitoba, Man., 1881. (*Macoun.*) Griswold, Man. (*Rev. W. A. Burman.*)

(2657.) **C. longirostris,** Torrey, Schweinitz, An. Tab. (1823.)

C. Sprengelii, Dew.; Spreng. Sys. Veg. III., 827, (1826.)
C. longirostris, var. *minor*, Boott, Phila. Acad. Sc. 78, (1863.)
C. longirostris, var. *microcystis*, Bœckeler, Linnæa, XLI., 241, (1877.)

Growing in large tufts sparingly on rocky ledges or in thickets. Andover, and Sussex, N.B. (*Fowler, Cat.*) Ledges, King's Mountain, near Chelsea, Q.; abundant in a coppice at Hemlock Lake, New Edinburgh, Ottawa. (*Fletcher, Fl. Ott.*) On Gibson's Mountain, Prince Edward Co.; on the "Big Boulder," Trent Talley, above Trenton, and on limestone ridges, Marmora, Hastings Co., Ont. (*Macoun.*) River bank, London, Ont. (*Burgess. Millman.*) Souris River, Man. (*Burgess.*)

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Thickets, along the Kaministiqua, twenty miles above Fort William; rather common at Portage la Prairie and westward to Fort Ellice, in the Assiniboine Valley; rather uncommon on grassy slopes near the Bow River, at Morley, Alberta. (*Macoun.*) Carleton House to Rocky Mountains. (*Hooker, Fl.*)

(2658.) **C. Saskatchewana,** Bœckeler, Linnæa, XLI., 159, (1876.)

This species has been described from young specimens collected by Douglas somewhere on the Saskatchewan. We have seen nothing to tally with the description, and can make no suggestion regarding its proper disposition. Bœckeler places it next to *C. vaginata*, and Bailey near *C. debilis*. Better specimens are much needed.

(2659.) **C. capillaris,** Linn. (1753); Hook., Fl. II., 227.

C. capillaris, var. *elongata*, Olney, Prel. Cat. Wheeler's Pl. 53.

Quite common on the rocky borders of northern lakes and streams. Newfoundland. (*La Pylaie.*) Bass River, Kent Co.; Edmonton, and Kennebeccasis Bay, N. B. (*Fowler, Cat.*) Boundary Lake, N. B. (*Pringle.*) Esquimaux Island, Mingan, Q. (*St. Cyr.*) Salt Lake, South West Point, and Ellis Bay, Anticosti; common on exposed points, Gaspé coast; very common around Lake Superior, and northward to Lake Nipigon. (*Macoun.*) Lake Mistassini, N.E.T.; The Twins, James Bay. (*J. M. Macoun.*) Michipicotin River, Ont. (*R. Bell.*) Assiniboine Rapids, east of Brandon, Man.; rather common on the margins of streams and ravines from Morley westward through the Rocky Mountains to Roger's Pass, summit of the Selkirk Mountains, B.C.; McLeod's Lake, lat. 55°, and Peace River Pass, lat. 56°, B.C. (*Macoun.*) Lowes River, lat. 62° north of British Columbia (*Dawson.*) Fort Norman, Bear Lake, and Rocky Mountains. (*Hooker, Fl.*) Ounalashka. (*Rothr. Alask.*) Greenland. (*Lange.*)

Var. **Krausei,** Krantz. (MSS.)

C. Krausei, Bœckeler, Engler's Bot. Jahrb. VII., 279, (1886.)

Dr. August Krantz, who has carefully examined the whole collections of Krause made in Alaska, writes me that Bœckeler's new species is only an androgynous form of *C. capillaris*, and suggests the above varietal name. Alaska. (*Krause.*)

(2660.) **C. obesa,** Allioni, var. **minor,** Boott, Ill. 161.

C. supina, Wahl. (1802); Hook., Fl. II., 225.

We know nothing of this species. None of our specimens are anything like it. Bear Lake, and Rocky Mountains. (*Hooker, Fl.*) Greenland. (*Lange.*)

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* * *Beak bidentate.*

† *Perigynium smooth.*

(2661.) **C. fulva,** Good., Linn. Trans. II., 177, (1792); Hook., Fl. II., 225.

C. Greeniana, Dew. Sill. Journ. XXX., 61, (1836.)

Newfoundland. (*Goodenough.*) Specimens gathered at Ellis Bay, Anticosti, are referred here, and if correctly so, are certainly indigenous. The fertile spikes are usually two, the lower is long pedunculed, and the upper almost sessile; staminate spike also long pedunclod. Mr. Arthur Bennett, F.L.S., of England, has confirmed this identification.

(2662.) **C. riparia,** W. Curtis, Fl. Lond. IV., t. 60, (1792.)

C. lacustris, Willd. (1805); Pursh, Fl. I., 45; Hook., Fl. II., 227.

Newfoundland. (*Reeks.*) In water near Weldford Station, Bass River, Kent Co., N.B. (*Fowler, Cat.*) Sugar Bush Lake, Montcalm Co., Q. (*D'Urban.*) Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Marshes, Bay of Quinte, and in wet meadows and marshes all over central Ontario, and westward to Red Bay, Lake Huron; marshes on Pelée Point, Lake Erie. (*Macoun.*) Vicinity of Hamilton, Ont. (*Logie.*) Common at London, Ont. (*Burgess. Millman.*) Swamps, Lake of the Woods. (*Burgess. Dawson.*) Lake Winnipeg, and Cumberland House. (*Hooker, Fl.*) Moose Factory, James Bay. (*Cottar & Dr. Hayden.*)

† † *Perigynium hirsute.*

(2663.) **C. Houghtonii,** Torrey, Cyp. 413, (1836); Hook., Fl. II., 223.

A beautiful and distinct species found chiefly in the northern pine forests; on sandy or rocky knolls, where it creeps extensively. On ridges at Truro, N.S. (*Macoun & Burgess.*) Dry grassy places, Coal Branch, Kent Co.; Tobique River, at Pokiok, N.B. (*Fowler, Cat.*) Dry ridges, Gaspé coast, Q. (*Macoun.*) Rivière Ste. Marguerite, Q. (*Pringle.*) On a hill 1,500 feet high, at Tadousac, Q. (*A. T. Drummond.*) Vicinity of Ottawa; very rare. (*Fletcher, Fl. Ott.*) On rocky islands, Partridge Lake, and Gull Lake, Addington Co.; abundant in new meadows in Tudor, Madoc, and Marmora, Hastings Co.; Elliott's Falls, Gull River, Victoria Co.; very common in the woods all around Lake Superior, especially about Port Arthur; common at Lake Nipigon, north of Lake Superior. (*Macoun.*) Michipicotin River, Ont. (*R. Bell.*) Woods west of Edmonton, lat. 54°, N.W.T. (*Macoun.*) Methy Portage, lat. 57°. (*Richardson.*) Hudson Bay to Cumberland House, on the Saskatchewan. (*Hooker, Fl.*)

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(2664.) **C. filiformis,** Linn. (1753); Hook., Fl. II., 223.

Peat bogs, and wet marshy meadows. Newfoundland. (*Reeks.*) Lighthouse Point, Yarmouth, N.S. (*Macoun.*) Elsie, near Richibucto; Arthurette, N.B. (*Fowler, Cat.*) At Jupiter River, and English Bay, Anticosti; near Point Fame Lighthouse, Gaspé coast, Q. (*Macoun.*) Ste. Helen's Island, Montreal. (*C. F. McCrea.*) Marsh near Ottawa. (*Fletcher, Fl. Ott.*) Marsh west of Prescott Junction, Ont. (*Billings.*) Beaver meadows and marshes, North Hastings, Ont.; marshes, Bruce Peninsula, Ont.; Lake Hannah, Nipigon River. and along the Kaministiqua, near Fort William; also on Livingstone Point, Lake Nipigon. (*Macoun.*) Swampy ground, London, Ont. (*Burgess. Millman.*) Common in the Columbia Valley, at Donald, and westward up Beaver Creek Valley, Selkirk Mountains; Westwood's Swamp, near Nanaimo, and in a marsh at Horne Lake, Vancouver Island. (*Macoun.*) Norway House to Cumberland House. (*Hooker, Fl.*)

(2665.) **C. lanuginosa,** Michx., Fl. I., 175, (1803); Hook., Fl. II., 223.

C. pellita, Muhl. (1805); Pursh, Fl. I., 44.

C. filiformis, var. *lanuginosa,* Bœck.; Bailey, Carex, Syn. 74, (1886.)

Wet meadows and marshes, never in bogs; extending from the Atlantic to the Pacific. Pictou, N.S. (*McKay.*) Moncton, and Petitcodiac; Edmunton, N.B. (*Fowler, Cat.*) Lower Tobique River, N.B. (*Brittain.*) Salt Lake, and Jupiter River, Anticosti; Grand Vallée, Gaspé coast, Q. (*Macoun.*) West of St. Sauveur, Quebec city. (*St. Cyr.*) Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Wet meadows, near the junction at Prescott, Ont. (*Billings.*) Very common in wet meadows throughout central Ontario and westward to Lake Huron at Red Bay, also north-westerly around Lake Nipigon, and south to the Kaministiqua, near Port Arthur. (*Macoun.*) Meadows at Kingston, Ont. (*Millman.*) Vicinity of London, Ont. (*Burgess.*) Lake Mistassini, N.E.T. (*J. M. Macoun.*) Saskatchewan River to Methy Portage, lat. 57°. (*Richardson.*) Very abundant in marshy meadows, throughout the prairie region and extending north to Lake Athabasca, in lat. 59°, and south to lat. 49°, and westerly by Morley through the Rocky Mountains to Donald in the Columbia Valley; meadows near Victoria, Vancouver Island. (*Macoun.*) Cadboro Bay, Vancouver Island. (*Fletcher.*) Lake Mistassini; Canada to Mackenzie River. (*Hooker, Fl.*)

Var. **æmathorhyncha,**

C. æmathorhyncha, Olney, Bot. King's Exp. V., 373, (1871.)

C. filiformis, var. *æmathorhyncha,* W. Boott, Bot. Calif. II., 250, (1880.)

C. filiformis, var. *latifolia,* Bailey, Carex, Syn. 74, (1886.)

We have kept *C. lanuginosa* distinct from *C. filiformis,* because they

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differ sufficiently in habit and general character to constitute good species. At present species in America are, in general, too ill-defined, and it is the opinion of the writer that all permanent forms should be described, and specific distinctions placed on record, so that future workers may have less difficulty in working up the plants of any region than has been experienced by me in elaborating the flora of Canada. Specimens referred here were collected at Vancouver city, on Burrard Inlet, by Prof. Fowler. They agree precisely with Mr. W. Boott's description, and specimens distributed by Suksdorf.

* * * *Perigynium long-beaked, inflated and bicuspidate.*
† *Perigynium smooth.*
‡ *Lupulinæ, Bailey, Carex, Syn.* 61.

(2666.) **C. subulata,** Michx. (1803); Pursh, Fl. I., 40; Hook., Fl. II., 221.

C. Collinsii, Nutt., Gen. N. Am. Pl. II., 205, (1818.)
C. Michauxii, Dew. Sill. Journ. X., 273, (1826.)

Deep cedar swamps, in *sphagnum.* Canada. (*Hooker, Fl.*) We have no Canadian specimens of this species. Collectors should look for it in Quebec and New Brunswick. The reflexed teeth of the perigynium and grass-like appearance of the whole plant distinguish it from the next, which grows in the same situations.

(2667.) **C. Michauxiana,** Bœeckeler, Linnæa, XLI., 336, (1877.)

C. rostrata, Michx., Fl. I., 173, (1803.)
C. xanthophysa, vars. *nana & minor,* Dew. Sill. Journ. XIV., 353, (1828.)
C. folliculata, Hook., Fl. II., 221, (1840.)

Peat bogs, Newfoundland. (*La Pylaie.*) Cold bog near Louisburg, Cape Breton. (*Macoun & Burgess.*) Bog at Rothesay; Lily Lake, and border of Clifton Lake, N.B. (*Fowler, Cat.*) Lake Mistassini, N.E.T. (*Hooker, Fl.*)

(2668.) **C. folliculata,** Linn. Sp. Plant, 978, (1753.)

C. xanthophysa, Wahl. Köngl. Acad. Handl. XXIV., 152, (1802.)

Peat bogs and marshes. Cold swamps, Newfoundland. (*Reeks.*) Marshes and wet ground in numerous places at Point Pleasant, and North West Arm, Halifax, N.S. (*Macoun & Burgess.*) Halifax, N.S. (*Sommers, Cat.*) Norton, and St. Martin's, N.B. (*Fowler, Cat.*) Eastman's Springs, near Ottawa. (*Fletcher, Fl. Ott.*) Port Cockburn, Lake Joseph, Muskoka, Ont. (*Burgess.*) Peat bog, Caledonia Springs, near Ottawa. (*C. F. McCrea.*)

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(2669.) **C. intumescens,** Rudge, Linn. Trans. VII., 97. (1804); Hook., Fl. II., 221.

C. folliculata, Wahl. Köngl. Acad. Handl. XXIV., 152, (1802); Michx., Fl. I., 172, (1803); Pursh, Fl. I., 42, (1814.)

Swamps and marshy woods; common. Newfoundland. (*La Pylaie.*) Truro, and Annapolis, N.S. (*Macoun.*) Rather common in Pictou, and Guysboro Co's., N.S. (*McKay.*) Glenelg, Guysboro Co., N.S. (*Faribault.*) Rather common in Kent Co.; King's Co., and on St. John River, N.B. (*Fowler, Cat.*) Plains of Abraham, Quebec. (*St. Cyr.*) Sugar Bush Lake, Montcalm Co., Q. (*D'Urban.*) Woods near Buckingham, Q. (*Ami.*) St. Andrews, near Montreal. (*McGill Coll. Herb.*) Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Wet woods, common at Prescott, Ont. (*Billings.*) Very common in wet woods throughout central Ontario, and westward to Amherstburgh Lake Erie, and Owen Sound, Georgian Bay; also north-westerly to Lake Ellen, Nipigon River, and along the west shore of Lake Superior, and westward to Rainy Lake. (*Macoun.*) Vicinity of Hamilton, Ont. (*Logie.*) London, Ont. (*Burgess. Millman.*) Canada to Norway House, north of Lake Winnipeg. *Hooker, Fl.*) Lake of the Woods, and Rainy Lake. (*Richardson.*)

(2670.) **C. Grayii,** Carey, Sill. Journ. IV., 22, (1847.)

C. intumescens, var. *globularis,* Gray, Ann. N. Y. Lyc. III., 236, (1836.)

Damp woods near Buckingham, Q.; very rare, collected by H. M. Ami. (*Fletcher, Fl. Ott.*) Abundant in wet grassy woods, Colchester, near Amherstburgh, Lake Erie. (*Macoun.*)

(2671.) **C. lurida,** Wahl. Köngl. Acad. Handl. XXIV., 153, (1802.)

C. lupulina, Muhl. (1805); Hook., Fl. II., 223; Macoun, Cat. No. 2118; Pursh, Fl. I., 41, (1814.)

C. Canadensis, Dew. Sill. Journ. XLI., 2d. Ser. 229, (1866.)

Abundant in tufts about ponds and in ditches in Ontario. Near Windsor, N.S. (*McGill Coll. Herb.*) Hampton, and Norton, N.B. (*Fowler, Cat.*) Tobique River, N.B. (*Hay.*) Halifax, N.S. (*Sommers, Cat.*) St. John, on the Richelieu River, Q. (*C. F. McCrea.*) Gatineau Point, Q.; and abundant in all low grounds at Ottawa, in various forms. (*Fletcher, Fl. Ott.*) Abundant at Prescott, Ont. (*Billings.*) Very common throughout central and western Ontario, extending to fifteen miles up the Kaministiqua, west of Lake Superior. (*Macoun.*) London, Ont.; Point aux Pins, Essex Co., Ont.; and Parry Sound, Georgian Bay. (*Burgess.*) Vicinity of Hamilton, Ont. (*Logie.*) Port Colborne, Lake Erie. (*McGill Coll. Herb.*) Hudson Bay. (*Hooker, Fl.*)

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Var. **divergens,** Bailey, Carex, Syn. 63, (1886.)

C. Bella-villa, Dew. Sill. Journ. 2d. Ser. XLI., 229, (1866.)

"Plant more slender, spikes scattered or remote, oblong or cylindrical, much more loosely flowered, more or less staminate at the apex; perigynium more straw-colored, less turgid, slenderly beaked, diverging at right angles; scales longer, conspicuously awned." (*Bailey.*) Marshy meadows near Foxboro, six miles north of Belleville, Hastings Co., Ont. I believe, with Prof. Bailey, that this is a variety of *C. lurida,* but it cannot be a hybrid with *C. folliculata,* as that species has never been found within one hundred miles of the locality.

Var. **polystachya,** Bailey, Carex, Syn. 63, (1886.)

C. lupulina, var. *polystachya,* Schweinitz & Torr., Mon. Cyp. 337, (1825.)
C. lupuliformis, Sartwell, Exsicc. 147, (1848.)
C. Beyrichiana, Bœckeler, Linnæa, XLI., 239, (1877.)

In Hastings and Northumberland Co's., Ont., there are numerous forms of *C. lurida,* all of which have pedunculate and scattered spikes, and are very unlike typical *C. lurida.* One of these was named *C. Canadensis,* by Dewey, and the others referred to *C. lupulina,* var. *pedunculata,* and var. *gigantoidea,* Dewey. These are now placed under this form pending a better arrangement of the several varieties of this multiform species.

‡‡ *Vesicariæ, Bailey, Carex, Syn,* 64.

(2672.) **C. oligosperma,** Michx., Fl. I., 174, (1803); Hook., Fl. II. 220.

C. Oakesiana, Dew. Sill. Journ. XIV., 351, (1828.)

Peat and sphagnum swamps, rather rare. Labrador. (*Allen.*) In a peat bog near Richibucto, and at Madawaska, N.B. (*Fowler, Cat.*) Thunder River, Q. (*St. Cyr.*) Mer Bleue, near Ottawa. (*Fletcher, Fl. Ott.*) Abundant in bogs, Kiladar and Kennebec, Addington Co., and Tudor, Hastings Co., Ont.; One-mile Portage, Nipigon River, Lake Superior. (*Macoun.*) Lake Superior. (*Richardson.*) London; and Port Cockburn, Lake Joseph, Muskoka, Ont. (*Burgess.*) Lake Mistassini, N.E.T. (*J. M. Macoun.*) From Norway House, Lake Winnipeg, to English River, and Bear Lake, lat. 66°. (*Richardson.*) Peat bogs, Methy Portage, lat. 57°, where it is in abundance. (*Macoun.*)

(2673.) **C. Raeana,** Boott, Rich. Arc. Exped. II., 344, (1857.)

We have never seen specimens of this species except those of Prof. Fowler, from New Brunswick, and the younger specimens collected by Mr. C. E. Smith in northern Maine, and distributed by Olney and

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Canby as *C. pulla*. Prof. Bailey, in his Carex Synopsis, page 66, seems to refer these specimens to *C. saxatilis*, var. (?) *miliaris*, but on the preceding page he evidently places the same specimens under this species. In the latter case I agree with him, as the Maine specimens are over two feet in height. He says, speaking of var. (?) *milliaris*: "very slender, six to sixteen inches high," which cuts out the Maine (immature) specimens altogether, and, in my opinion, Prof. Fowler's New Brunswick specimens also. It is just possible that *C. pulla*, Gray, Man. 602, and *C. Raeana*, are the same, and my tall Anticosti specimens of *C. rotundata*, and Prof. Porter's specimens from Maine, are *C. miliaris*, Michx. Specimens collected at Lake Mistassini, by Mr. J. M. Macoun, would also come in with *C. miliaris*. As it was at Lake Mistassini that Michaux obtained the specimens on which he founded the species, our view of the case may be the correct one. Wet shores Rothesay and on the opposite side of the Kennebeccasis River, N.B. (*Fower, Cat.*) Methy Portage, long. 110°, lat. 57°. (*Richardson.*) While on the Portage in September, 1875, I looked for this species, but brought away *C. oligosperma* instead of it.

(2674.) **C. miliaris,** Michx., Fl. I., 174, (1803); Pursh, Fl. I., 41; Hook., Fl. II., 224.

C. saxatilis, var. (?) *miliaris*, Bailey, Bot. Gaz. IX., 120, (1884.)
C. pulla, var. (?) *miliaris*, Gray, Man. Ed. V. 602, (1868.)

Lake Mistassini, N.E.T. (*Michaux. J. M. Macoun.*) Ungava Bay, Labrador, 1884. (*Turner* vide *Bailey.*) In wet gravel along Jupiter River, Anticosti, near its mouth, 1883. (*Macoun.*) The specimens from the above mentioned places are all alike, but those from Anticosti are much taller, and exactly match Prof. T. Porter's specimens from Moosehead Lake, Maine. The Canadian specimens have their sheaths more or less fibrous, and the perigynium a distinctly notched beak.

(2675.) **C. physocarpa,** Presl, Reliq. Hænk. I. 205, (1830.)

Abundant in the Bow River Valley, and along mountain streams up to 5,500 feet, and extending from Morley westward through the Rocky Mountains to Donald, in the Columbia Valley. (*Macoun.*) Rocky Mountains of British America. (*Drummond.*)

(2676.) **C. saxatilis,** Linn., Fl. Lapp. 259.

C. pulla, Good., Linn. Trans. III., 78, (1797.)
C. vesicaria, var. *alpigena*, Fries. Mant. II., 142.

Specimens collected on "The Twins," in James Bay, in July, 1887, by J. M. Macoun, are referred here by Mr. Bennett, who says they are identical with Norwegian specimens in his possession. (*Macoun.*) Greenland. (*Lange.*)

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Var. (?) **Grahami,** Hook. & Arn., Brit. Fl., Ed. VIII., 510.

C. Grahami, Boott, Linn. Trans. XIX., 215, (1843.)
C. saxatilis, var. *major*, Olney, Bot. King's Exp. V., 370, (1871.)
C. saxatilis, Hook., Fl. II., 220, (1840.)

Rocky Mountains. (*Hooker, Fl.*)

(2677.) **C. compacta,** R. Br., Ross. Voy. App. page 143, (1823.)

C. membranacea, Hook., App. Parry's 2nd Voy., 406; Hook., Fl. II., 220
C. hymenocarpa, Drejer, Revis. Crit. Car. 58, (1841.)
C. ampullacea, var. *borealis*, Lange, Rink's, Grœnl. II., 118.
C. rotundata, Rothrock's Alaskan Pl. 457.

Arctic coast; Southampton Island; Duckett's Cove, North Somerset; Kotzebue Sound. (*Hooker, Fl.*) Baffin's Bay. (*R. Brown.*) Cape Chudleigh, Nottingham Island, and Eskimo village of Hyla, Hudson Straits. (*R. Bell.*) Bear Lake. (*Drummond* vide *Bailey*) Kotzebue Sound. (*Rothr. Alask.*) On the coast of Hudson Bay, between Fort Churchill and Cape Lady Pelly. (*Dr. Rae.*) Arctic sea-coast. (*Richardson.*)

(2678.) **C. rotundata,** Wahl. Fl. Lapp. 235, (1812); Hook., Fl. II., 220.

Arctic America; Slave Lake, and Fort Enterprise. (*Hooker, Fl.*) Specimens from Ungava Bay, northern Labrador (*Turner*, 1884), are evidently this species. (*Bailey.*) North Twin Island, James Bay, 1887. (*J. M. Macoun.*)

(2679.) **C. rostrata,** Withering, Arrang. Brit. Pl., Ed. II., (1790.)

C. vesicaria, Pursh, Fl. I., 45, (1814.)
C. obtusangula, Ehrh. Calam. Exs., No. 50, (1791.)
C. ampullacea, Good., Linn. Trans. II., 207, (1792.)

Bog North Sydney, Cape Breton. (*Macoun & Burgess.*) Table Top Mountain, Gaspé, Q. (*Porter.*) Six miles up Becscie River, Anticosti; Lake Nipigon, Ont.; common along the tributaries of the Saskatchewan, and north to Methy Portage, lat. 57°; valley of Bow River, at Calgary, and westward through the Rocky Mountains, to the Columbia Valley, where it is common. (*Macoun.*) Cumberland House, English River, and Bear Lake. (*Hooker, Fl.*) Moose Factory, James Bay. (*Cottar & Dr. Hayden.*) Churchill River, Keewatin. (*R. Bell.*) Near Pincher Creek, Rocky Mountains. (*Dawson.*) Vancouver city, Burrard Inlet, B.C. (*Prof. Fowler.*) Common in marshes near Cedar Hill, and at Nanaimo, and Alberni, Vancouver Island. (*Macoun.*) Lake, six miles from Victoria, and Mount Finlayson, Vancouver Island. (*Fletcher.*)

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Var. **utriculata,** Bailey, Carex, Syn. 67, (1886.)
C. utriculata, Boott, Hook., Fl. II., 221, (1840.)
C. utriculata, var. *minor*, Boott, Hook., Fl. II., 221, (1840.)
C. ampullacea, var. *utriculata*, Carey, Gray, Man. 566, (1848.)
C. utriculata, var. *globosa*, Olney, Bot. King's Exp. V., 374, (1871.)

A very common *Carex* in marshes and by streams from the Atlantic to the Pacific. In bogs at Truro, and Windsor, N.S.; and at North Sydney Cape Breton. (*Macoun & Burgess.*) Magdalen Islands, Gulf of St. Lawrence. (*J. Richardson.*) Pictou Co., N.S. (*McKay.*) Swampy places, Bass River, Fredericton, and Norton, N.B. (*Fowler, Cat.*) Point Sechè, Gaspé coast, Q. (*Macoun.*) St. Sauveur, Quebec city. (*St. Cyr.*) River Richelieu, at Dorchester, Q. (*C. F. McCrea.*) Mer Bleue, near Ottawa. (*Fletcher, Fl. Ott.*) Very common in marshes and swamps throughout central Ontario, and westward to Owen Sound, Georgian Bay; and north-westerly to Nipigon River, at Red Rock, and west to Lake of the Woods. (*Macoun.*) Lake Mistassini, N.E.T. (*J. M. Macoun.*) Red River prairie, and Souris Valley, Man. (*Dawson.*) Canada to Rocky Mountains. (*Hooker, Fl.*) Marshes along the various streams in the prairie region, and west to Calgary, on the Bow River. (*Macoun.*) Lakes Superior and Huron, and Methy Portage. (*Richardson.*)

(2680.) **C. monile,** Tuckerman, Enum. Meth. 20, (1843.)
C. Vaseyi, Dew. Sill. Journ. 2d. Ser. XXIX., 347, (1860.)

Not uncommon in ditches and along streams. Glenelg, Guysboro Co., N.S. (*Faribault.*) Pictou, N.S.; St. John, N.B. (*Burgess.*) Wet places, at Bass River, and Fredericton; also Salmon River; borders of Lake Elsie, Richibucto, N.B (*Fowler, Cat.*) Moffatt's Island, opposite Montreal. (*C. F. McCrea.*) Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Rather common in all the river bottoms in central Ontario, from Belleville westward to Owen Sound, and north-westerly to the Long Portage, Nipigon River, and along Current River, near Port Arthur, Lake Superior. (*Macoun.*) Lake Mistassini, N.E.T.; Severn River, Keewatin. (*J. M. Macoun.*) Michipicotin River, Ont. (*R. Bell.*) Valley of the Columbia, at Donald, B.C. (*Macoun.*)

(2681.) **C. vesicaria,** Linn. Sp. Pl. 979, (1753.)

We have seen no specimens which we can name true *C. vesicaria*. Northern British Columbia. (*Rothrock* vide *Bailey.*) Sitka, and Kotzebue Sound. (*Rothr. Alask.*)

Var. **major,** Boott, Hook., Fl. II., 221, (1840.)

Valley of the Fraser, at Ladner's Landing, B.C. (*Fletcher.*) Abundant in marshes and by rivers at Victoria, Nanaimo, Qualicum, and especially at Sproat Lake, near Alberni, Vancouver Island. (*Macoun.*)

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(2682.) **C. Tuckermani,** Boott, Hook., Journ. Bot. V., 73, (1846.)

C. bullata, Dew. Sill. Journ. IX., 71, (1825); Hook., Fl. II., 221.
C. Tuckermani, var. *cylindrica,* Dew. Sill. Journ. XLIV., 48, (1845.)
C. cylindrica, Carey, Gray, Man. 566, (1848.)

Rather common in some localities growing in large clumps, mostly in water. Newfoundland. (*Reeks.*) Wet bank of Bass River, Kent Co., N.B. (*Fowler, Cat.*) Nun's Island, Montreal. (*C. F. McCrea.*) Nation River, and plentiful in all low grounds near Ottawa. (*Fletcher, Fl. Ott.*) Wet ground, Prescott, Ont. (*Billings.*) Abundant in wet spots around Belleville, and westward in central Ontario; Port Dover Junction, and near St. Thomas, Elgin Co., Ont. (*Macoun.*) Swamps near London, Ont. (*Burgess. Millman.*) Vicinity of Hamilton, Ont. (*Logie.*) Port Colborne, Lake Erie. (*McGill Coll. Herb.*) Canada to Norway House. (*Hooker, Fl.*)

(2683.) **C. retrorsa,** Schweinitz, An. Tab. (1823.)

C. reversa, Sprengl. Syst. Veg. III., 827.

Marshy places and by ditches; rather common. Marshes at Truro, and Annapolis, N.S. (*Macoun.*) Common in wet places at Bass River. Kent Co., N.B. (*Fowler, Cat.*) Campbellton, N.B. (*Chalmers.*) Rivière du Loup, Q. (*Pickering.*) Recollet Swamp, near Montreal. (*C. F. McCrea.*) Sugar Bush, and Bevin's lakes, Montcalm Co., Q. (*D'Urban.*) Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Very common at Prescott, Ont. (*Billings.*) Very abundant throughout central Ontario, and westward to Owen Sound, and north-westerly to Lake Nipigon and south to Port Arthur and Fort William, Lake Superior. (*Macoun.*) Vicinity of Hamilton, Ont. (*Logie.*) Swampy flat, London, Ont. (*Burgess. Millman.*) Oba Lake, Ont. (*R. Bell.*) Apparently quite rare in the Rocky Mountains, only noticed at Donald, Columbia Valley. (*Macoun.*) Saskatchewan. (*Bourgeau.*) Cumberland House to the Rocky Mountains. (*Hooker, Fl.*) Lake of the Woods, and Winnipeg River. (*Richardson.*)

Var. **Hartii,** Gray, Man. Ed. V., 600, (1868.)

C. Hartii, and var. *Bradleyii,* Dew. Sill. Journ. 2d. Ser. XLI., 226, (1886)
C. Macounii, Dew. Sill. Journ. XLI., 2d. Ser. 228, (1866.)

Abundant in ponds at Stirling, Hastings Co.; and in Tudor, and Marmora, North Hastings; also on F. Macoun's farm, Seymour, Northumberland Co., Ont., 1864. I agree with Prof. Bailey in placing this under var. *Hartii,* Gray, where I believe it properly belongs. Prof. Dewey thought it might be new, but suggested *C. Hartii* as its next of kin.

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(2684.) **C. tentaculata,** Muhl. (1805); Hook., Fl. II., 222; Pursh, Fl. I., 40, (1814.)

C. rostrata, Willd. Sp. Pl. IV., 282, (1805.)
C. tentaculata. var. *rostrata,* Pursh, Fl. I., 41, (1814.)
C. Purshii, Olney, Exsicc. I., 30, (1870.)

Wet grounds by rivers and ponds; not rare. Pictou, N.S. (*McKay.*) Ditches, Annapolis, N.S. (*Macoun & Burgess.*) Abundant along the shore, Bass River bridge, Kent Co., N.B. (*Fowler, Cat.*) Chipman, N.B. (*Wetmore.*) St. Sauveur, near Quebec. (*St. Cyr.*) Quebec. (*W. L. Shepperd.*) Nation River, near Ottawa. (*Fletcher, Fl. Ott.*) Presqu'ile Point, Lake Ontario; abundant at Moore's Lake, Gull River, Victoria Co., Ont. (*Macoun.*) Woods near Hamilton, Ont. (*Logie.*) Port Cockburn, Lake Joseph, Muskoka, Ont. (*Burgess.*)

‡ ‡ ‡ *Pseudocyperæ, Bailey, Carex, Syn.* 69.

(2685.) **C. Schweinitzii,** Dew. Sill. Journ. IX., 68, (1825.)

A very distinct and beautiful species. Very rare in Canada. Newfoundland. (*Reeks.*) In damp, newly-cleared land, near Grafton, Northumberland Co., Ont., 1866. Never observed by me since. (*Macoun.*) Vicinity of Hamilton, Ont. (*Logie.*)

(2686.) **C. hystricina,** Muhl. (1805); Pursh, Fl. I., 43, (1814); Hook., Fl. II., 222.

C. Cooleyi, Dew. Sill. Journ. XLVIII., 144, (1845.)
C. Georgiana, Dew. Sill. Journ. 2d. Ser. VI., 245, (1848.)
C. Thurberi, Dew. Bot. Mex. Bound. 232, (1859.)

Abundant by springs and in wet meadows and marshes. Newfoundland. (*Reeks.*) Wet meadows at Annapolis, and Cape Blomidon, N.S.; also Baddeck, Cape Breton. (*Macoun.*) Lily Lake, and Welsford, N.B. (*Fowler, Cat.*) Long Lake, St. John Co., N.B. (*Hay.*) Murray Bay, and St. Andrews, Q. (*McGill Coll. Herb.*) Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Very common around Prescott, Ont. (*Billings.*) Abundant in boggy meadows throughout central Ontario, and westward to Owen Sound, and northwestward to Port Arthur, and northward to Blackwater River, Lake Nipigon. (*Macoun.*) North shore of Lake Superior. (*Agassiz.*) Vicinity of Hamilton, Ont. (*Logie.*) Swamps near London, Ont. (*Burgess. Millman.*) Bosanquet, Lake Huron. (*McGill Coll. Herb.*) Medicine Hat, Alberta. (*J. M. Macoun.*) Not uncommon throughout the prairie region, north of lat. 52°. (*Macoun.*)

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(2687.) **C. Pseudo-Cyperus,** Linn.; Pursh, Fl. I., 44; Hook., Fl. II., 222, (1840.)

Not uncommon in marshes and swamps, in woods and by brooks in the clearings. Truro, Annapolis, and Windsor, N.S. (*Macoun.*) Frequent along the borders of lakes and in ditches in Kent Co.; Long Lake, St. John Co., and McAdam Junction, N.B. (*Fowler, Cat.*) Marsh near Campbellton, N.B.; marshes, Gaspé coast, Q. (*Macoun.*) Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Wet grounds, Prescott Junction, Ont. (*Billings.*) Swamps and stagnant pools, in clumps, very common throughout central Ontario, and westward to Owen Sound, Georgian Bay. (*Macoun.*) Swamp, near London, Ont. (*Burgess. Millman.*) Rainy River, north-western Ontario. (*Burgess.*) Muskeg Creek, Lake Winnipeg, Man. (*J. M. Macoun.*) Cumberland House, Saskatchewan River. (*Hooker, Fl.*) Rat Portage, Winnipeg River. *Bourgeau.*) Marsh, Lake of the Woods. (*Dawson.*)

Var. **comosa,** W. Boott, Bot. Calif. II., 252, (1880.)

C. furcata, Ell. Sk. Bot. II., 552.

C. Pseudo-Cyperus, Schw. & Torr., Car. Mon. 355, (1825.)

C. comosa, Boott, Linn. Trans. XX., 117, (1845); Macoun, Cat. No. 1973.

Rare in Canada or seldom collected. Newfoundland. (*Reeks.*) St. Stephen, N.B. (*Vroom.*) Lakeville, N.B. (*Brittain.*) Wet grounds near Prescott, Ont. (*Billings.*) Big Swamp, Murray, Northumberland Co.; Weller's Bay, Lake Ontario. (*Macoun.*) Vicinity of Hamilton, Ont. (*Logie.*) Swamps, London, Ont. (*Burgess. Millman.*)

(2688.) **C. trichocarpa,** Muhl. (1806); Hook., Fl. II., 222.

C. striata, Carey, Gray, Man. Ed. I., 561, (1848.)

C. trichocarpa, var. *turbinata,* Dew. Sill. Journ. XI., 159, (1827.)

Rare in Canada. Bog near Picton, Prince Edward Co., meadows along Crow River, Marmora, Hastings Co., Ont. (*Macoun.*) British America. (*Hooker, Fl.*)

Var. **Deweyl,** Bailey, Bot. Gaz. X., 293, (1885.)

C. lævi-conica, Dew. Sill. Journ. 2d. Ser., XXIV., 47, (1857.)

Abundant in the bed of Thunder Creek, west of Moose Jaw, and in Swift Current Valley, Assiniboia. (*Macoun.*) Brandon, Man. (*Prof. Fowler.*)

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Var. **aristata,** Bailey, Bot. Gaz. X., 293, (1885.)

C. aristata, R. Br.; Hook., Fl. II., 222, (1840); Macoun, Cat. No. 1958.
C. atherodes, Sprengl. Syst. Veg. III., 828.
C. orthostachys, C. Meyer, Fl. Alt. IV., 231.
C. aristata var. *longo-lanceata*, Dew. Sill. Journ. XVIII., 102, (1854.)

Marshes along the Grand Trunk Railway, three miles east and five miles west of Belleville, Ont., and in low boggy places, Crow River, close to the bridge at Marmora, Hastings Co., Ont. (*Macoun.*) Wet ground near the Ottawa and Prescott Railway, Prescott, Ont. (*Billings.*) Lakes Superior and Huron. (*Richardson.*) Along the Kaministiqua River twenty miles from Lake Superior; very abundant throughout the whole prairie region, and extending north to Peace River and Lake Athabasca, to the base of the Rocky Mountains at Morley, and in the Columbia Valley at Donald. (*Macoun.*) Nelson River, Keewatin. (*R. Bell.*) Cumberland House, and Fort Carleton, on the Saskatchewan. (*Hooker, Fl.*) This *Carex* produces much of the marsh hay of the prairie region, and in summer is the chief food of Indian ponies. It never grows in brackish marshes, and all ponds where it grows have good water the whole season.

Dr. Gray and Prof. Bailey place *C. mirata*, Dewey, under this variety, but I think they are in error, as it has not the characters which separate this form from the species, but rather those of variety *imberbis*. I believe, however, it is a distinct variety. An examination of Prof. Dewey's Herbarium will decide this, as he had many specimens of it, collected by myself at Belleville, Ont., over twenty years ago. Indeed, the probabilities are that both *C. Bella-villa* and *C. mirata* equal *C. livida*, var. *divergens*, Bailey.

(2689.) **C. Alaskana,** Bœckeler, Engler's Bot. Jahrb. VII., Pt. III., 277, (1886.)

Alaska. (*Krause.*) Specimens referred by Arthur Bennett, F.L.S., with doubt to this species, were gathered in damp woods on the left bank of the Red Deer River, about a mile and a half above the mouth, at the head of Lake Winnepegoosis, Man., 1881. (*Macoun.*)

Addendum to Cyperaceæ.

(2690.) **Scirpus Clintonii,** Gray, Ed. V., 561.

S. planifolius. Muhl.; Torr. Bot. N. York II., 351, in part.

A rare species in Canada; only known from New Brunswick, but will likely be found along Lake Erie. Madawaska; Dideguash, St. Patrick, N.B. (*Fowler, Cat.*)

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(2691.) **S. riparius,** Spreng, Fl. Austr. VII., 327.

S. pygmæus, Gray, Proced. Am. Acad. VII., 327.
S. setaceus, Linn. var. Bœckeler, Linnæa, XXXVI., 500.
Isolepis riparia, R. Br.; Hook., f. Fl. Tasm. II., 89.
I. leptocaulis, Torr. Pacif. R. Rep. IV., 153.

In boggy spots, reached by high tides, at Beacon Hill, near Victoria; also in salt marshes, below Alberni, on the west coast of Vancouver Island. (*Macoun.*)

CXVIII. GRAMINEÆ. (Grass Family.)

673. BECKMANIA, Host. Gram. Aust. III., 5.

(2692.) **B. erucæformis,** Host. var. **uniflorus,** Scribner.

Quite common in wet and overflowed grounds throughout the prairie region, extending east to Port Arthur, on the railway and west to Castle Mountain, in the Rocky Mountains. (*Macoun.*) Souris Plain, Assiniboia. (*J. M. Macoun.*) Milk River Ridge, N.W.T., and west fork of that river, Rocky Mountains. (*Dawson.*) Wood Mountain, Alberta. (*Burgess.*) Lake Mistassini, N.E.T.; Severn River, Keewatin. (*J. M. Macoun.*) Moose Factory, James Bay. (*Cottar & Dr. Hayden.*) Hayes, and Churchill rivers, Hudson Bay. (*R. Bell.*) High Bluff, Man. (*McGill Coll. Herb.*) Emerson, Man.; and Medicine Hat, Alberta. (*Prof. Fowler*) Red River, Man., 1826. (*Douglas.*) Griswold, Man. (*Rev. W. A. Burman.*)

674. PANICUM. Linn. Gen. 96. (PANIC GRASS.)

(2693.) **P. agrostoides,** Spreng.; Torr., Fl. N. York II., 429.

P. elongatum, Pursh, Fl. I., 69.

Common in clumps along Sproat Lake, six miles from Alberni, west coast of Vancouver Island, 1887. (*Macoun.*) Although collected in August, the specimens are not more than half grown. There is no doubt of it being indigenous, as there are no settlements where it was found

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(2694.) **P. capillare,** Linn.; Michx., Fl. I., 47; Pursh, Fl. I., 67; Hook., Fl. II., 236.

Abundant in cultivated fields and waste places. Truro, and Windsor, N.S. (*Macoun.*) A weed in gardens and cultivated grounds, N.B. (*Fowler, Cat.*) Lobster Bay, and St. Charles River, Q. (*St. Cyr.*) Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Common at Prescott, Ont. (*Billings.*) Abundant throughout central Ontario, and westward to Port Arthur, Lake Superior. (*Macoun.*) Vicinity of Hamilton, Ont. (*Logie.*) Fields at London, and Toronto. (*Burgess.*) Waste places, Kingston, Ont. (*Millman.*) Washow Bay, Lake Winnipeg. (*J. M. Macoun.*) Quite common along streams throughout the prairie region; observed only at Stamp River Falls, near Sproat Lake, Alberni, Vancouver Island. (*Macoun.*) Victoria, Vancouver Island. (*Fletcher.*) Lytton, B.C. (*Hill.*) Saskatchewan. (*Hooker, Fl.*)

(2695.) **P.** CRUS-GALLI, Linn.; Michx., Fl. I., 46; Pursh, Fl. I., 66; Macoun, Cat. No. 2258.

Oplismenus Crus-Galli, Kunth; Hook., Fl. II., 236.

Usually along ditches and about barns in cultivated ground. Pictou, N.S. (*Macoun. McKay.*) A very variable and troublesome weed about barnyards and gardens, N.B. (*Fowler, Cat.*) St. Charles River, Quebec city. (*St. Cyr.*) Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Very common around Prescott, Ont. (*Billings.*) Abundant in barnyards and ditches in the settled parts of Ontario, westward to Owen Sound. (*Macoun.*) Vicinity of Hamilton, Ont. (*Logie.*) Abundant around London, Ont. (*Burgess. Millman.*) West Rideau Lake, Ont. (*Porter.*)

Var. **hispidum,** Ell. Sk. I., 114.

P. muricatum, Michx., Fl. I., 47. (?)
P. Walteri, Pursh, Fl. I., 66.
Oplismenus muricatus, Kunth; Hook., Fl. II., 236.

Rather uncommon but apparently indigenous. Along the Nation River, at Casselman. (*Fletcher, Fl. Ott.*) In alluvium along the Salmon River, above Shannonville, Hastings Co., Ont. (*Macoun.*) Point Edward, River St. Clair, Ont. (*J. M. Macoun.*) Vicinity of Hamilton, Ont. (*Logie.*) Distinguished chiefly from the species by the very hispid sheaths of the leaves.

(2696.) **P. depauperatum,** Muhl. Gram. 112.

P. rectum, Rœm. & Schultz.; Hook., Fl. II., 235.
P. involutum, Torr., Fl. I., 147.

Dry sandy or rocky ground; rather rare. Newfoundland. (*Reeks.*) Sandy woodlands, Kingston, N.S. (*Macoun.*) Vicinity of Ottawa; rare.

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(*Fletcher, Fl. Ott.*) Huckleberry Rapids, Argenteuil Co., Q. (*D'Urban.*) Grand Trunk gravel pit, near Prescott, Ont. (*Billings.*) Very abundant on Laurentian rocks, at Shannonville, and on the bank of the Trent, above the railway bridge, near Trenton, Hastings Co., Ont.; dry places at Owen Sound; up the Kaministiqua, near Kakabeka Falls, and on Pie Island, Lake Superior. (*Macoun.*) Vicinity of London, Ont. (*Burgess. Millman.*) Dry banks, Hamilton, Ont. (*Logie.*) Plains of the Saskatchewan. (*Hooker, Fl.*)

(2697.) **P. dichotomum,** Linn.; Pursh, Fl. I., 67.

Rather common in dry or damp thickets and meadows. The typical form is the *P. nodiflorum*, Lam., and is chiefly found in meadows and on rocks. Newfoundland. (*Reeks.*) Common at Bedford, N.S. (*Macoun.*) Glenelg, Guysboro Co., N.S. (*Faribault.*) In dry fields and woods, Kent Co., N.B. (*Fowler, Cat.*) Quebec. (*St. Cyr.*) Banks of the Rivière Rouge, Argenteuil Co., Q. (*D'Urban.*) Tadousac, Q. (*A. T. Drummond.*) Vicinity of Ottawa; common. (*Fletcher, Fl. Ott.*) Thickets near Prescott, Ont. (*Billings.*) Abundant on dry sandy soil throughout Ontario, extending westward to Owen Sound, and north-west to Sault Ste. Marie, and around Lake Superior to Thunder Bay. (*Macoun.*) Port Colborne, Ont. (*McGill Coll. Herb.*) Vicinity of Hamilton, Ont. (*Logie.*) London, Windsor, and Point Pelée, Lake Erie. (*Burgess.*) Rupert River, N.E.T.; Medicine Hat, Alberta. (*J. M. Macoun.*)

Var. **nitidum,** Lam.; Gray, Man. Ed. V., 649.

P. nitidum, Lam.; Michx., Fl. I., 47; Pursh, Fl. I., 67; Hook., Fl. II., 235.

This is the smooth unbranched form most frequently met with in thickets. St. James, N.B. (*Vroom.*) Sandy woods, near Belleville, and Owen Sound, Ont. (*Macoun.*) Throughout Canada to the Saskatchewan. (*Hooker, Fl.*)

Var. **pubescens,** Gray, Man. Ed. V., 649.

P. pubescens, Lam.; Michx., Fl. I., 47; Pursh, Fl. I., 68.
P. thermale, Boland. Proced. Calif. Acad. II., 181.

Leaves and sheaths pubescent. Sandy woods, Point Pelée, Lake Erie. (*Burgess.*) Valley of the Upper Columbia, B.C. (*Dawson.*) On the higher slopes of Mount Dawson, Roger's Pass, B.C. (*Macoun.*)

(2698.) **P.** GLABRUM, Gaud. Agrost. I., 22.

Digitaria glabra, Rœm. & Schultz.; Torr. Fl. I., 154.
D. Ischæmum, Schreb.; Muhl. Gram. 121.

Introduced chiefly along railways and waste ground about towns. Truro, and Pictou, N.S. (*Macoun.*) Fredericton, on the railway track;

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Nashwaaksis, Hampton, and Salmon River, N.B. (*Fowler, Cat.*) Point Lèvis, Q. (*Macoun.*) Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Railway track, two miles west of Prescott, Ont., and in a sandy field near that town. (*Billings.*) Waste places at Belleville, and Owen Sound; on the railway track at St. Thomas, Chatham, and Windsor, Ont. (*Macoun.*) Near Hamilton, Ont. (*Logie.*) Meadows, roadsides, and lawns, London, Ont. (*Burgess. Millman.*)

(2699.) **P. latifolium,** Linn.; Michx., Fl. I., 49; Pursh, Fl. I., 68; Hook., Fl. II., 235.

P. clandestinum, Hook., Fl. II., 235.

Waste ground, Grand Trunk gravel pit, near Prescott, Ont. (*Billings.*) Rich rocky woods and thickets, common in Prince Edward, Hastings, and Northumberland Co's., Ont.; Grassy woods, Niagara Falls. (*Macoun.*) Vicinity of Hamilton, Ont. (*Logie.*) Sandy woodlands, near London. (*Burgess. Millman.*) Jones Falls, near Kingston, Ont. (*Millman.*) Quebec, and Ontario. (*Hooker, Fl.*)

(2700.) **P. laxiflorum,** Lam.; Pursh, Fl. I., 68.

Small specimens of this species have been sent from St. Stephen, N.B., by Mr. James Vroom. They are, although very small, identical with others received from Dr. Vasey, Botanist Agricultural Department, Washington.

(2701.) **P. microcarpum,** Muhl. var. **sphærocarpon,** Vasey.

P. dichotomum, var. *sphærocarpum,* Gray.

In thickets on dry hillsides, near Windsor, N.S., 1883. (*Macoun & Burgess.*) All the various forms which have hitherto passed as *P. dichotomum* should be carefully examined and compared with authentic specimens as there is no doubt but we have more forms than are here recorded.

(2702.) **P. pauciflorum,** Ell.; Gray, Man. Ed. V., 648.

Open prairie, Emerson, Man. (*Burgess. Millman.*) Swampy prairie, Red River, Man. (*Dawson.*)

(2703.) **P. SANGUINALE,** Linn. Sp. Pl. I., 55.

Digitaria sanguinale, Michx., Fl. I. 45; Pursh, Fl. I., 69.

Syntherisma præcox, Walt. Fl. Car. 76.

Fields, roadsides, and railway tracks, sparingly introduced. Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Banks of the St. Lawrence, west of Prescott, Ont. (*Billings.*) Common at Queenston and Niagara. (*Macoun.*) Vicinity of Hamilton, Ont. (*Logie.*) Waste places at London, and Point Pelée, Ont. (*Burgess.*) Roadside, Port Dover, Ont. (*Millman.*)

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(2704.) **P. scoparium,** Lam. Encycl. IV.

P. pauciflorum, Ell. (?); Gray, Man. Ed. V., 648.

Sparingly collected on Point Pelée, Lake Erie. (*Burgess.*) Spence's Bridge, B.C. (*Fletcher.*) Abundant at Long Lake, near Departure Bay, shores of Shawnigan and Horne Lakes, and common at Alberni, on the west coast of Vancouver Island. (*Macoun.*)

(2705.) **P. virgatum,** Linn.; Michx., Fl. I., 352; Pursh, Fl. I., 67; Hook., Fl. II., 235.

Sandy shores of rivers and lakes. Sands of Presqu'ile Point, Lake Ontario; shores of Red and Chicken Bays, Lake Huron. (*Macoun.*) Port Colborne, Lake Erie. (*McGill Coll. Herb.*) Point aux Pins, Lake Erie. (*Burgess.*) Red Deer River, north of Porcupine Mountain, Man.; sand hills, at the source of the Qu'Appelle River, Assiniboia. (*Macoun.*) Lake Huron, and Saskatchewan. (*Hooker, Fl.*) Red River, Man., 1826. (*Douglas.*)

(2706.) **P. xanthophysum,** Gray, Gram. & Cyp. I., 20; Hook., Fl. II., 235.

Rather rare in open, rocky, or sandy woods. Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Fields near the Grand Trunk gravel pit, Prescott, Ont. (*Billings.*) Dry thickets and meadows, east of Belleville; very common; also on Rice Lake Plains, and at Port Dover Junction, Ont. (*Macoun.*) Vicinity of Hamilton, Ont. (*Logie.*) Port Colborne, Lake Erie. (*McGill Coll. Herb.*) La Cloche, Trading Post, Georgian Bay. (*R. Bell.*) Sandy soil, twenty miles up the Kaministiqua, west of Lake Superior; not uncommon in thickets along the Assiniboine, as far west as Fort Ellice, Man. (*Macoun.*) Plains of the Saskatchewan, (*Hooker, Fl.*)

674. SETARIA, Beauv. (BRISTLY FOXTAIL-GRASS.)

(2707.) **S.** GLAUCA, Beauv.; Hook., Fl. II., 236.

Panicum glaucum, Linn.; Michx., Fl. I., 46; Pursh, Fl. I., 66.
Pennisetum glaucum, R. Br., Prodr. 195.

Naturalised in cultivated grounds, and on waste places about towns and cities. A common weed in gardens and manured ground, Bass River, N.B. (*Fowler, Cat.*) St. Remi, Q. (*McGill Coll. Herb.*) Point Lèvis, Q. (*Macoun.*) Quebec city. (*St. Cyr.*) Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Very common at Prescott, Ont. (*Billings.*) Abundant in all cultivated grounds near barns, and on waste lots in villages

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in central Ontario, and westward to Owen Sound. (*Macoun.*) Waste lots and gardens, Hamilton, Ont. (*Logie.*) Fields near London, Ont. (*Burgess. Millman.*) Saskatchewan. (*Hooker, Fl.*)

(2708.) **S.** ITALICA, Kunth; Gray, Man. Ed. V., 650.

Introduced and cultivated, but spontaneous for some years after. Vacant lots, Quebec. (*St. Cyr.*) Common on waste lots, Ottawa. (*Fletcher, Fl. Ott.*) Frequent in vacant lots about towns and villages in central Ontario. (*Macoun.*) Vicinity of Hamilton, Ont. (*Logie.*) Old fields, London, Ont. (*Burgess, Millman.*)

(2709.) **S.** VERTICILLATA, Beauv.; Gray, Man. Ed. V., 649.

Panicum verticillatum, Willd.; Pursh, Fl. I., 66.

Waste places near dwellings; not common. Pictou Co., N.S. (*Sommers, Cat.*) On ballast at St. John, N.B. (*Fowler, Cat.*) Not rare in cultivated ground around Belleville, Ont.; fields at Owen Sound; waste lots, Toronto. (*Macoun.*) Roadside near Montreal. (*Fletcher.*) Fields and roadsides, Hamilton, Ont. (*Logie.*)

(2710.) **S.** VIRIDIS, Beauv. Agrost. 51.

Panicum viride, Linn.; Pursh, Fl. I., 66.
Pennisetum viride, R. Br. Prodr. 195.

Naturalized in cultivated grounds. Very common everywhere in the settled districts. Grand Lake, Halifax Co., N.S. (*Sommers, Cat.*) Gardens and cultivated grounds, Bass River, N.B. (*Fowler, Cat.*) Vacant lots, Quebec. (*St. Cyr.*) Point Lèvis, Q. (*Macoun.*) Very abundant about Ottawa. (*Fletcher, Fl. Ott.*) Very common at Prescott, Ont. (*Billings.*) Abundant in all cultivated ground throughout central Ontario. (*Macoun.*) Fields and waste places, Hamilton, Ont. (*Logie.*) Vicinity of London, Ont.; Emerson, Man. (*Burgess.*)

675. CENCHRUS, Linn. (HEDGE-HOG GRASS)

(2711.) **C.** TRIBULOIDES, Linn.; Michx., Fl. I., 61; Pursh, Fl. I., 60.

C. echinatus, Muhl.; Torr., Fl. I., 68.
C. Carolinianus, Walt., Fl. Car. 79.

Introduced along railways in a few localities. Great Western Railway, a mile east of Dundas, Ont. (*Logie.*) Port Colborne, Lake Erie. (*McGill Coll. Herb.*) Point Pelée, and Point aux Pins, Lake Erie. (*Burgess.*) Sandy shore, near Leamington, Essex Co., Ont. (*Pearson.*)

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676. SPARTINA, Schreb. (CORD-GRASS)

(2712.) **S. cynosuroides,** Willd. Enum. I., 80; Hook., Fl. II., 242.

S. polystachya, Hook., Fl. II., 242.
Dactylis cynosuroides, Linn. Sp. I., 71.
Trachynotia cynosuroides, Michx., Fl. I., 64.
Limnetis cynosuroides, Pursh, Fl. I., 59.

Abundant in fresh and salt-water marshes and by rivers. Marsh at Truro, N.S. (*Campbell.*) Oyster Marsh, N.S. (*McGill Coll. Herb.*) Pictou, N.S. (*McKay.*) Marshes at Annapolis, and Windsor, N.S., and Baddeck, Cape Breton. (*Macoun & Burgess.*) Marshes, especially near the coast, Kent Co., N.B. (*Fowler, Cat.*) Salt Lake, Anticosti, and at the mouth of the Restigouche, Q. (*Macoun.*) Pentecost River, Q. (*St. Cyr.*) St. Remi, and Montreal Mountain, Q. (*McGill Coll. Herb.*) Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) River Trent, at Trenton, and Weller's Bay, Lake Ontario; not uncommon along the still waters of the Trent and Gull rivers, in central Ontario. (*Macoun.*) Moon River, Muskoka, and London, Ont. (*Burgess.*) North shore of Lake Superior. (*Agassiz.*) High Bluff, Man. (*McGill Coll. Herb.*) Moose Mountain Creek, Assiniboia. (*J. M. Macoun.*) Souris River, Man. (*Millman.*) Very abundant in marshes throughout Manitoba and north-westward to the Saskatchewan. (*Macoun.*) Red River prairie, Man., 1826. (*Douglas.*) Saskatchewan to Little Slave Lake. (*Hooker, Fl.*) Winnipeg, and Northwest Angle Road; east of the Souris River, Man. (*Dawson.*)

(2713.) **S. gracilis,** Trin.; Steud. Gram. 214.

Very abundant in salt marshes throughout the whole prairie region. It is seldom tall, and is usually cut for hay. Old Wives Lakes, Red Deer Lakes, and the prairie south of Battleford. (*Macoun.*) Wood Mountain, Assiniboia. (*Millman, Dawson.*)

(2714.) **S. juncea,** Willd. Enum. I., 81.

Trachynotia juncea, Michx., Fl. I., 64.
Limnetis juncea, Pers.; Pursh, Fl. I., 59.

Salt marshes at Pictou, N.S. (*McKay.*) Salt marshes, Kouchibouguac, and Richibucto, N B. (*Fowler, Cat.*) Marshes, Yarmouth, N.S. (*Macoun.*) Newfoundland. (*Reeks.*) Margaret's Bay, N.S. (*Millman, Herb.*) Salt marshes, Bic, Q. (*Pringle.*)

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(2715.) **S. polystachya,** Willd.; Hook., Fl. II., 242, in part.

Canada. (*Hooker, Fl.*) Magdalen Islands, N.S. (*McKay.*) We strongly suspect that these references belong to *S. cynosuroides.* The remark in Gray's Manual that *S. cynosuroides* is only a fresh-water species, is not borne out by the facts, as all my eastern specimens were gathered in brackish marshes, and certainly the awn and other distinctive characters were just as well marked as in the specimens from the Great Lakes.

(2716.) **S. stricta,** Roth. var. **glabra,** Gray, Man. Ed. V., 628

Salt marshes, Baddeck, Cape Breton. (*Burgess.*) Marshes, Pictou, N.S. (*McKay.*)

Var. **alterniflora,** Gray, Man. Ed. V., 620.

Newfoundland. (*Reeks.*) Pictou, N.S. (*McKay.*) Salt marshes, Richibucto, N.B. (*Fowler, Cat.*) Salt marsh, nearly at low tide, Ellis Bay, Anticosti. (*Macoun.*) Margaret's Bay, N.S. (*Millman, Herb.*) Salt marsh, Lower St. Lawrence. (*Pringle.*) Cacouna, Q. (*Burgess, Herb.*)

677. ZIZANIA, Linn. Gen. 1062. (WILD RICE.)

(2717.) **Z. aquatica,** Linn.; Pursh, Fl. I., 60.

Z. clavulosa, Michx., Fl. I., 75.
Hydropyrum esculentum, Link.; Hook., Fl. II., 233.

Very abundant in many marshes and lakes throughout Ontario. Abundant in water at Hampton, and other places in King's Co.; not rare at Salmon River, N.B. (*Fowler, Cat.*) Beauport, Q.; and Island of Orleans. (*St. Cyr.*) St. Andrews, Q. (*McGill Coll. Herb.*) Borders of rivers and brooks, near Ottawa. (*Fletcher, Fl. Ott.*) Very abundant in the Bay of Quinte, and Rice Lake, and throughout the whole length of the Trent and all its tributaries; common in marshes all around the Great Lakes, and nine miles west of Fort William, Thunder Bay. (*Macoun.*) Marsh at the mouth of the Mississaugi River, Georgian Bay. (*R. Bell.*) Marshes, Burlington Bay, Hamilton, Ont. (*Logie.*) Marshes at Kingston, and Picton, Ont. (*Millman.*) Toronto marsh, and Point aux Pins, Lake Erie. (*Burgess.*) Lake of the Woods, Rosseau River, Man. (*Burgess. Dawson.*) Lake Huron. (*Hooker, Fl.*) Newfoundland. (*Reeks.*)

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678. LEERSIA, Swartz. (WHITE GRASS.)

(2718.) **L. oryzoides,** Swartz.; Pursh, Fl. I., 62; Hook., Fl. II., 233.

Phalaris oryzoides, Linn. Sp. I., 55.

Asprella oryzoides, Lam. Ill. No. 858.

Truro, and Windsor, N.S. (*Macoun.*) Wet banks of streams, Bass River, N.B (*Fowler, Cat.*) Charlotte and Carleton Co's., N.B. (*Vroom.*) King's Co., N.B. (*Brittain.*) Aylmer, Q.; rare near Ottawa. (*Fletcher, Fl. Ott.*) Conway's Creek; very common at Prescott, Ont. (*Billings.*) Low marshy meadows and ditches; common throughout central Ontario. (*Macoun.*) Marshes, Hamilton, Ont. (*Logie.*) Shallow water, London, Ont. (*Burgess. Millman.*) Canada to the Saskatchewan. (*Hooker, Fl.*) Newfoundland. (*Reeks.*)

(2719.) **L. Virginica,** Willd.; Hook., Fl. II., 233.

Asprella Virginica, Rœm. & Schultz. Syst. II., 266.

Swamps in wet, shady woods, evidentiy rare in Ontario. Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Near Hamilton, Ont. (*Logie.*) Shallow water, near London, Ont. (*Burgess. Millman.*) Ontario. (*Goldie.*) Newfoundland. (*Reeks.*)

679. ANDROPOGON, Linn. Gen. 1145. (BEARD-GRASS.)

(2720.) **A. provincialis,** Lam; Scribner, Trans. Kansas Acad. Sci. IX., 116.

A. furcatus, Muhl.; Pursh, Fl. I., 75; Hook., Fl. II., 256; Macoun, Cat. No. 2268.

Rather common in dry, sandy thickets or open woods. Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Rocky woodlands, west of Brockville, Ont. (*Billings.*) Sandy fields and thickets east of Belleville; very abundant on Rice Lake Plains, and on sandy and gravelly soil all through central Ontario, and westward to Lake Erie. (*Macoun.*) Vicinity of Hamilton, Ont. (*Logie*) Port Colborne, Ont. (*McGill Coll. Herb.*) Shady woodland, London, Ont. (*Burgess. Millman.*) Shores of Red Deer River, near Porcupine Mountain, Man. (*Macoun.*) Hudson Bay; Lake Huron; Saskatchewan to the Rocky Mountains. (*Hooker, Fl.*) Turtle Mountain, Man. (*Dawson. Burgess.*) Lake of the Woods. (*Dawson.*) Red River, Man., 1826. (*Douglas.*)

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(2721.) **A. scoparius,** Michx., Fl. I., 57; Pursh, Fl. I., 74; Hook., Fl. II., 256.

A. purpurascens, Willd. Sp. IV., 913.
Pollinia scoparia, Spreng.; Rœm. & Schultz. Syst. II., 832.

Dry sandy soil, widely distributed. Goat Island, in Grand Lake, N.B. (*Fowler, Cat.*) Kirk's Ferry, Q. (*Fletcher, Fl. Ott.*) Abundant on Rice Lake Plains, and westward to Lakes Erie and Huron. (*Macoun.*) Vicinity of Hamilton, Ont. (*Logie.*) Port Colborne, Ont. (*McGill Coll. Herb.*) Sandy soil, London, Ont. (*Burgess. Millman*) East side of La Cloche Island, Georgian Bay. (*R. Bell.*) South Antler Creek, Man. (*Millman.*) Abundant in dry spots in Manitoba, and throughout the southern prairie region to Calgary and Morley, Alberta. (*Macoun.*) Banks of the Saskatchewan. (*Hooker, Fl.*)

680. CHYSOPOGON, Trin. (WOOD-GRASS.)

(2722.) **C. nutans,** Benth. & Hook., Gen. Plant. III., 1135.

Andropogon nutans, Linn.; Pursh, Fl. I., 74.
A. avenaceus, Michx., Fl. I., 58; Pursh, Fl. I., 74; Hook., Fl. II., 257.
Sorghum nutans, Gray; Macoun, Cat. No. 2271.

Dry sandy woods, near Ottawa. (*Fletcher, Fl. Ott.*) Rocky woodland west of Brockville, Ont. (*Billings.*) Bank of the Trent at Heely Falls; common on Rice Lake Plains; along the Humber and Don, at Toronto, and at Niagara Falls. (*Macoun.*) Vicinity of Hamilton, Ont. (*Logie.*) London; and Port Cockburn, Muskoka, Ont. (*Burgess.*) Saskatchewan. (*Hooker, Fl.*) High Bluff, Man. (*McGill Coll. Herb.*)

681. PHALARIS, Linn. Gen. 74. (CANARY-GRASS.)

(2723.) **P. arundinacea,** Linn.; Michx., Fl. I., 43; Pursh, Fl. I., 65; Hook., Fl. II., 234.

P. Americana, Torr., Fl. I., 100.
Calamagrostis colorata, Nutt., Gen. I., 46.

In ditches, marshes, and the borders of ponds; common westward Marshes at Truro, and Annapolis, N.S.; and at Whycocomagh, Cape Breton. (*Macoun.*) Not uncommon in Carleton Co., and along the St. John River, N.B. (*Vroom.*) Campbellton, N.B. (*Chalmers.*) Becscie River, and Ellis Bay, Anticosti. (*Macoun.*) Vicinity of Ottawa. (*Fletcher,*

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Fl. Ott.) Swamps; common at Prescott, Ont. (*Billings.*) Borders of ponds, marshes, and swamps, throughout central Ontario, westward to Owen Sound, north-westerly to Lake Nipigon, and south to the Kaministiqua River, fifteen miles from its mouth. (*Macoun*) Vicinity of Hamilton, Ont. (*Logie.*) Port Colborne, Ont. (*McGill Coll. Herb.*) Swampy river bank, London, Ont. (*Burgess. Millman.*) Sault Ste. Marie. (*R. Bell.*) North shore of Lake Superior. (*Agassiz.*) Lake Mistassini, N.E.T.; Black River, Lake Winnipeg; Souris Plain, Man. (*J. M. Macoun.*) Lake of the Woods; Red River prairie, Man. (*Dawson.*) Abundant in marshes throughout Manitoba, and westward to the Peace River, lat. 56°; rather common in ponds in the foot-hills around Morley, and westward through the Rocky Mountains to Donald in the Columbia Valley; common in northern British Columbia on the Nachacco; along Shawnigan Lake, and the Alberni Canal, Vancouver Island. (*Macoun.*) Frequent on the banks of streams, from Canada to Bear Lake, and from Hudson Bay to the Pacific ocean. (*Hooker, Fl.*) Vancouver city, B.C. (*Prof. Fowler.*)

(2724.) **P.** CANARIENSIS, Linn. Sp. I., 54.

Spontaneous on waste heaps around towns and villages. Pictou, N.S. (*McKay.*) Spreading from ballast at St. John, N.B. (*Fowler, Cat.*) Quebec city. (*St. Cyr.*) Around Ottawa. (*Fletcher, Fl. Ott.*) Waste places, near Prescott, Ont. (*Billings.*) Waste heaps at Belleville, Ont. (*Macoun.*) Lake shore at Kingston, Ont. (*Millman.*) Vicinity of Hamilton, Ont. (*Logie.*) Waste places, London, Ont. (*Burgess.*) On ballast at Nanaimo, Vancouver Island. (*Macoun.*)

682. ANTHOXANTHUM, Linn. Gen. 42. (SWEET-SCENTED VERNAL GRASS.)

(2725.) **A.** ODORATUM, Linn.; Michx., Fl. I., 39; Pursh, Fl. I., 65; Hook., Fl. II., 235.

Introduced in meadows and pastures, chiefly eastward. Newfoundland. (*Reeks.*) Bedford, Halifax Co., N.S. (*Sommers, Cat.*) Pictou, N.S. (*McKay.*) Truro, Halifax, and Yarmouth, N.S. (*Macoun.*) Common in grass fields and pastures, Bass River, N.B. (*Fowler, Cat.*) Ste. Geneviève Island, Seven Islands Bay, and Island of Orleans. (*St. Cyr.*) Port Colborne, Ont. (*McGill Coll. Herb.*) Low meadows, London, Ont. (*Burgess. Millman.*) Vicinity of Hamilton, Ont. (*Buchan.*) Abundant in meadows at Victoria, and Nanaimo, Vancouver Island. (*Macoun.*) Greenland. (*Lange.*)

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683. HIEROCHLOA, Gmel. (HOLY GRASS.)

(2726.) **H. alpina,** Rœm. & Schultz.; Hook., Fl. II., 234.

Holcus alpinus, Wahl. Fl. Lapp., 31.

On the summits of high mountains and northward. Ford's Harbor, coast of Labrador; Cape Chudleigh, and Cape Prince of Wales, Hudson Strait. (*R. Bell.*) Ungava Bay, Labrador. (*Barnston.*) Pond's Bay, and Lancaster Sound, Baffin's Bay. (*Dr. Kennedy.*) On the coast of Hudson Bay, between Fort Churchill and Cape Lady Pelly. (*Dr. Rae.*) Moose Factory, James Bay. (*Cottar & Dr. Hayden.*) Fort George, James Bay. (*J. M. Macoun.*) Summit of Mount Albert, Gaspé, Q. (*Macoun. Porter.*) Mountain at Finlayson River, alt. 4,300 feet, lat. 61° 30°, north of British Columbia. (*Dawson.*) Labrador, and Arctic sea-shores and islands. (*Hooker, Fl.*) Ounalashka, Kotzebue Sound, and Arctic coast. (*Rothr. Alask.*) Greenland. (*Lange.*)

(2727.) **H. borealis,** Rœm. & Schultz.; Hook., Fl. II., 234.

Holcus odoratus, Linn.; Michx., Fl. I., 56.

H. fragrans, Pursh, Fl. I., 78.

Sandy shores, meadows, or prairies; widely distributed. Newfoundland. (*Reeks.*) Truro, and Yarmouth, N.S. (*Macoun.*) On the Magdalen Islands, N.S. (*J. Richardson.*) Bedford Basin, N.S. (*Sommers, Cat.*) Coast of Labrador. (*McGill Coll. Herb.*) Molus River, Richibucto and elsewhere, in Kent Co., N.B. (*Fowler, Cat.*) Sheldrake River, and Pentecost River, Q. (*St. Cyr.*) Salt Lake, and Jupiter River, Anticosti. (*Macoun.*) Summit of Mount Albert, Gaspé, Q. (*Porter.*) Border of a field near Belleville, Ont.; extremely abundant all around Lake Superior, and northward up the Nipigon River, to Camp Alexander. (*Macoun.*) River flat, London, Ont. (*Burgess. Millman.*) North shore of Lake Superior. (*Agassiz.*) Point aux Pins, Lake Erie; Emerson, Man. (*Burgess.*) Swampy prairie, Red River, and Pembina Mountain, Man. (*Dawson.*) Lake Mistassini, and down Rupert River, to James Bay; Beren's River, and Severn River, Keewatin; Moose Mountain, Man. (*J. M. Macoun.*) Oxford House, Keewatin. (*R. Bell.*) Very common in wet prairies and along rivers and lakes throughout the whole prairie region, and north to Peace River; not uncommon from the meadows at Morley through the Rocky Mountains to the Columbia Valley; common in northern British Columbia to lat. 55°, at Fort McLeod. (*Macoun.*) Telegraph Creek, lat. 58°, B.C.; Upper Liard River, lat. 60°, B.C.; Lewes River,

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lat. 62°, north of British Columbia. (*Dawson.*) Ounalashka, and Kotzebue Sound. (*Rothr. Alask.*) Bartlett Bay, Alaska. (*Meehan.*) Saskatchewan, and the Rocky Mountains; dry ground, near the source of the Columbia; Nootka Sound. (*Hooker, Fl.*)

(2728.) **H. pauciflora,** R. Brown, Hook., Fl. II., 234.

Melville, and other Arctic Islands. (*Hooker, Fl.*)

684. ALOPECURIS, Linn. Gen. 78. (FOX-TAIL GRASS.)

(2729.) **A. alpinus,** Smith; Hook., Fl. II., 234, in part.

Cape Prince of Wales, Digge's Island, Mansfield Island, and Nottingham Island, Hudson Strait. (*R. Bell*) Fort George, James Bay; between Fort Severn, and York Factory, Hudson Bay. (*J. M. Macoun*) Island of St. Lawrence, and Kotzebue Sound. (*Rothr. Alask.*) Pond's Bay, and Port Kennedy, Lancaster Sound. (*Dr. Walker.*) Coast of Hudson Bay, between Fort Churchill and Repulse Bay. (*Dr. Rae.*) Arctic sea-shores and islands. (*Hooker, Fl.*) Point Barrow, Arctic coast. (*John Murdoch.*) Greenland. (*Lange.*)

(2730.) **A. geniculatus,** Linn.; Hook., Fl. II., 233.

Apparently introduced eastward. Newfoundland. (*Reeks*) Abundant in ditches, Point Pleasant, Halifax, N.S. (*Macoun. Sommers, Cat.*) St. Andrews, N.B. (*Vroom.*) Wet places, Carleton, N.B. (*Fowler, Cat.*) Gravelly beach at the lower end of Presqu'ile Point, Lake Ontario; muddy flats at Amherstburgh, Lake Erie. (*Macoun.*) Watery places on the prairie west of Red Deer Lakes, Alberta. (*Macoun.*) Along the South Saskatchewan, Alberta. (*Dawson.*) Greenland. (*Lange.*)

Var. **aristulatus,** Munro; Torr., Fl. I., 97.

A. aristulatus, Michx., Fl. I., 43; Hook., Fl. II., 233; Macoun, Cat. No. 2115.
A. sub-aristatus, Pursh, Fl. I., 66.

Muddy places and ponds; common and widely distributed. Brigus, Newfoundland. (*R. Bell.*) Pictou, N.S. (*McKay*) Charlotte Co., N.B. (*Vroom.*) Petitcodiac, N.B. (*Brittain.*) Wet places, Bass River, N.B. (*Fowler, Cat.*) Campbellton, N.B. (*Chalmers.*) Salt Lake, Anticosti. (*Macoun.*) Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Common at Prescott, Ont. (*Billings.*) Very common throughout central Ontario, and extending north-westerly to Nipigon River and Lake. (*Macoun.*) Vicinity of Hamilton, Ont. (*Logie.*) Shallow water at London, Ont. (*Burgess. Millman.*) Parry Sound, Georgian Bay; Dawson Road, near

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Port Arthur; at Emerson, Man. (*Burgess.*) Kingston, Ont. (*Millman.*) Rupert River, N.E.T.; Severn River, Keewatin. (*J. M. Macoun.*) Churchill River, Hudson Bay. (*R. Bell.*) Not uncommon between Winnipeg and Point du Chien, Man. (*Dawson.*) In muddy places throughout the prairie region, especially northward, and from Calgary through the Rocky Mountains to the Columbia Valley; through northern British Columbia, to Fort McLeod, lat. 55°. (*Macoun.*) Ilgacho Brook, B.C. (*Dawson.*) Red River, Man., 1826. (*Douglas.*) Canada to Bear Lake. (*Hooker, Fl.*) Departure Bay, Vancouver Island. (*Meehan.*)

Var. **robustus,** Vasey, Bull. Torr. Bot. Club, XV., 13.

In wet places at Ladner's Landing, on the Fraser River, BC., 1885. (*Fletcher.*) Ponds, near Victoria and Cedar Hill (1875); and on Mount Benson, near Nanaimo, Vancouver Island. (*Macoun.*) Alaska. (*Vasey.*) This is a new variety.

(2731.) **A. Macounii,** Vasey, Bull. Torr. Bot. Club, XV., 12.

A. geniculatus, var. *pumila*, Vasey. (MS.?), 1875.

On dry rocks close to Victoria, 1875. Abundant in hollows in rocks where water lies, in the spring at Cadboro and Oak bays, near Victoria, Vancouver Island, 1887. (*Macoun.*) Very near if not identical with *A. Howellii*, Vasey.

(2732.) **A.** PRATENSIS, Linn.; Pursh, Fl. I., 65; Hook., Fl. II., 234.

Introduced from Europe and very abundant in meadows in the Atlantic provinces. Newfoundland. (*Reeks.*) Bedford, Halifax Co., N.S. (*Sommers, Cat.*) Very abundant at Annapolis (where it is locally named *French Timothy*), Grand Prè, Windsor, and Halifax, N.S; common at Louisburg, Cape Breton, where its French origin is again seen; not uncommon in meadows at Victoria, and Nanaimo, Vancouver Island. (*Macoun.*)

(2733.) **A. occidentalis,** Scribner, Coulter's Bot. Gaz. XI., 170, (1886.)

A. alpinus, Dawson, Bound. Rep. 377.

A. pratensis, var. *alpestris*, Vasey, Cat. Grasses, U. States, 34, (1885.)

A. alpinus, Hook., Fl. II., 234, in part.

North Fork of Old Man River, foot-hills of Rocky Mountains. (*Dawson.*) The leafy bract at the base of the spike is very characteristic of this species.

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685 ARISTIDA, Linn. Gen. 74. (TRIPLE-AWNED GRASS.)

(2734.) **A. basiramea,** Engelmann; Upham, Cat. Min. Pl. 163.

Vicinity of Brandon, Man. (*R. J. Scott.*) This is a new species found first by Mr. W. Upham, at Minneapolis, Minn.

(2735.) **A. dichotoma,** Linn.; Michx. Fl. 41; Pursh, Fl., I., 72.

Port Colborne, Lake Erie. (*McGill Coll. Herb.*) We have seen no Canadian specimens of this species.

(2736.) **A. purpurea,** Nutt.; Steud. Gram. 134.

On dry hillsides, at Spence's Bridge, B.C., 1883. (*Fletcher.*) Only this station is known at present in Canada.

686. STIPA, Linn. Gen. 90. (FEATHER-GRASS.)

(2737.) **S. avenacea,** Linn.; Gray, Man. Ed. V., 617.

In sandy open pine woods, Point aux Pins, eight miles above Sault Ste. Marie, 1869. (*Macoun.*)

(2738.) **S. comata,** Trin. & Rupr., Stipaceæ, 76.

S. juncea, Nutt., Gen. I., 58.
S. capillata, Hook., Fl. II., 237.
S. occidentalis, Bolander, Proced. Calif. Acad. IV., 169, in part; Macoun, Cat. No., 2151.

Abundant on dry prairies, and extending into British Columbia. Cypress Hills, and Milk River Ridge, Alberta. (*Dawson.*) Abundant at Reed Lake, Fort Walsh, and numerous other localities throughout the prairie region; vicinity of Spence's Bridge, B.C., and on dry rocks near Victoria, Vancouver Island. (*Macoun.*) Along the Fraser, at Lytton, B. C. (*Fletcher.*) Abundant at Kamloops, and Shuswap Lake, B. C. (*Prof. Fowler.*) Fort Carleton, on the Saskatchewan. (*Hooker, Fl.*)

(2739.) **S. Richardsonii,** Link., Hort. Berol. II., 245.

Petitcodiac, N.B. (*Fowler, Cat.*) North shore of Lake Superior, from Michipicotin to Pic River, and Peninsula Harbor. (*Macoun.*) Lake Mistassini, N.E.T. (*J. M. Macoun.*) Near Edmonton, on the Saskatchewan, and northerly to Lesser Slave Lake. (*Macoun.*)

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Var. **major,** N. Var.

Abundant in the foot-hills of the Rocky Mountains, at Morley, and westward to Donald, in the Columbia Valley. (*Macoun.*) This form exactly matches Scribner's No. 341 from Montana, but is quite unlike our northern and eastern specimens.

(2740.) **S. spartea,** Trin.; Gray, Man. Ed. V., 617.

Very abundant on the northern prairie region, forming the "Northern Buffalo Grass" of the Canadian ranchman. Its seeds in the wetter portions are very troublesome, penetrating the wool of sheep and clothing of men, and causing much annoyance. This grass, however, constituted the winter food of the buffalo, and is now the delight of horses in the winter season. It is usually classed with the "bunch" grasses. There is no part of the dry prairie where it does not grow, from Portage la Prairie westward to the Rocky Mountains. (*Macoun.*) Pembina Mountain, and from Winnipeg to Point du Chein, Man. (*Dawson.*) Red River, Man., 1826. (*Douglas.*)

(2741.) **S. viridula,** Trin. Act. Petrp. 39, (1836.)

S. spartea, Hook., Fl. II., 237, not Trin.

S. parviflora, Nutt. I., 58, not Desf.

Very common around badger holes, and in coulées throughout the prairie region and westward to the Pacific. Souris Plain, Man. (*J. M. Macoun.*) White Mud River, and Wood Mountain, Assiniboia. (*Dawson.*) Bank of Souris River, Man. (*Burgess.*) Abundant from Winnipeg to the Rocky Mountains, and westward to the Columbia Valley, at Donald; common around Victoria, on Cedar Hill, and at Oak Bay, Vancouver Island. (*Macoun.*) Banks of the Saskatchewan. (*Hooker, Fl.*)

(2742) **S. Columbiana,** N. Sp.

Closely related to the preceding, but much less in size, with a smaller panicle and an awn scarcely an inch long; glumes purplish, acuminate to a slender point. Yale, B.C.; Cedar Hill, four miles from Victoria, Vancouver Island. (*Macoun.*)

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687. ORYZOPSIS, Michx. (MOUNTAIN RICE.)

(2743.) **O. asperifolia,** Michx., Fl. I., 51; Pursh, Fl. I., 60; Hook., Fl. II., 236.

Urachne asperifolia, Trin. Diss. I., 174.
U. leucosperma, Link. Hort. Berol. I., 94.

Rocky woods, not infrequent, and widely extended. Newfoundland. (*Reeks.*) Rocky woods, Truro, and Halifax, N.S. (*Macoun.*) Fredericton Junction, and Port Elgin; Petitcodiac; common at Salmon River, in "blue-berry barrens," N.B. (*Fowler, Cat.*) Madeline River, Gaspé coast, Q. (*Porter.*) Gomin's Wood, Quebec city. (*St. Cyr.*) Woods along Jupiter River, Anticosti. (*Macoun.*) Woods in the vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Miriwin's Woods, near Prescott, Ont. (*Billings.*) Kemptville, Ont. (*Porter.*) Rich, rocky woods throughout central Ontario, westward to Owen Sound, north-westerly to Nipigon River, and south to Port Arthur, and twelve miles up the Kaministiqua River. (*Macoun.*) Vicinity of Hamilton, Ont. (*Logie.*) Port Colborne, Lake Erie. (*McGill Coll. Herb.*) Vicinity of Kingston, Ont. (*Prof. Fowler.*) Woods near Toronto. (*Burgess.*) Wooded banks, London, Ont. (*Burgess. Millman.*) Lake Mistassini, N.E.T. (*J. M. Macoun.*) Not uncommon on dry slopes from the Kananaskis through the Rocky Mountains to the Columbia Valley at Donald, B.C.; near Clinton, and at Soda Creek, on the Fraser, B.C. (*Macoun.*) Canada to the Rocky Mountains. (*Hooker, Fl.*)

(2744.) **O. Canadensis,** Torr. Fl. N. York II., 433.

O. parviflora, Nutt.; Hook., Fl. II., 236.
Stipa juncea, Michx., Fl. I., 54.
S. Canadensis, Poir.; Pursh, Fl. I., 72.
Milium pungens, Torr., Fl. I., 78.
Urachne brevicaudata, Trin. Gen. Pan., 27.

Rather rare in dry sandy and pine woods. Manowin Island, Seven Islands Bay, St. Lawrence River. (*St. Cyr.*) Tadousac, Lower St. Lawrence, Q. (*A. T. Drummond.*) Rocky woods, near Ottawa. (*Fletcher, Fl. Ott.*) Woodlands west of Brockville, Ont. (*Billings.*) Quite common at Chalk River, on the Ottawa, and at North Bay, Lake Nipissing; dry sandy hills at Belleville, and on the Oak Hills, Hastings Co.; very common on Rice Lake Plains, Northumberland Co., Ont. (*Macoun.*) Sandy thickets along Lake Huron, at Southampton, Ont. (*Burgess.*) Twenty-five miles west of Port Arthur, on high dry land. (*Macoun.*) Canada to the Saskatchewan. (*Hooker, Fl.*) South

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Kootanie Pass, Rocky Mountains; upper crossing of the Blackwater River, B.C. (*Dawson.*) Occasionally met with on dry gravelly slopes in the Rocky Mountains, from Castle Mountain to Donald in the Columbia Valley; Soda Creek, Fraser River, and Spence's Bridge, B.C. (*Macoun.*)

(2745.) **O. melanocarpa,** Muhl. Gram. 79.

O. asperifolia, Kunth, Enum. I., 176, in part.
Milium racemosum, Smith; Bigel. Fl. Bost., 25.
Piptatherum nigrum, Torr., Fl. I., 79.
Urachne racemosa, Trin. Diss. I., 174.

Rocky woods, rather rare and local. Woods, vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Miriwin's Woods, near Prescott, Ont. (*Billings.*) Very common amongst Laurentian rocks at Shannonville, and throughout North Hastings, Ont. (*Macoun.*) Jones Falls, Rideau Canal, Ont. (*Millman.*) Wooded hillsides, London, Ont. (*Burgess. Millman.*)

(2746.) **O. cuspidata,** Benth. Journ. Linn. Soc. XIX., 82.

Ericoma cuspidata, Nutt. Gen. I., 40; Macoun, Cat. No. 2143.
Stipa membranacea, Pursh, Fl. II., 728; Hook., Fl. II., 237.
S. hymenoides, Roem. & Schultz. Syst. II., 339.
Urachne lanata, Trin. Panic. 38.
Fendleria rhynchelytroides, Steud. Syn. Gram. 420.

A most beautiful grass, growing in large clumps on sand in the prairie region and British Columbia. White Mud River, Assiniboia, and Milk River Ridge, Alberta. (*Dawson. Burgess.*) Very abundant amongst sand hills at the source of the Qu'Appelle; north of the Cypress Hills; and south of Battleford. (*Macoun.*) Fort Carleton, Saskatchewan River. (*Hooker, Fl.*)

688. MILIUM, Linn. Linn. Gen. 79. (MILLET-GRASS)

(2747.) **M. effusum,** Linn.; Hook., Fl. II., 235.

A fine tall grass, growing in cold damp woods throughout the northern forest region. Wet thickets, Whycocomagh, Cape Breton; and at Salt Lake, and Jupiter River, Anticosti. (*Macoun.*) Richmond, Carleton Co., N.B. (*Fowler, Cat.*) Between Florenceville and Andover, N.B. (*Brittain.*) Nepisiquit Lakes, N.B. (*Hay.*) Island of Orleans, and Thunder River, Q. (*St. Cyr.*) Sugar Bush Lake, Montcalm Co., Q. (*D'Urban.*) Damp woods near Ottawa. (*Fletcher, Fl. Ott.*) Woods, near Prescott, Ont.; common. (*Billings.*) Cold woods, and cedar swamps, central Ontario, westward to Owen Sound, and north-westerly

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to Nipigon River, Lake Superior. (*Macoun.*) Komoka, Ont. (*Burgess.*) Wet woods, vicinity of London, Ont. (*Burgess. Millman.*) Neighborhood of Montreal and Quebec. (*Hooker, Fl.*)

689. MUEHLENBERGIA, Schreber. (DROP-SEED)

(2748.) **M. diffusa,** Schreb.; Pursh, Fl. I., 40.

Dilepycum minutiflorum, Michx., Fl. I.,40.

In grassy woodlands along Lake Erie, above the Canal at Port Colborne. (*Macoun.*) Point Pelée, Essex Co., Ont. (*Burgess.*) Vicinity of Hamilton, Ont. (*Buchan.*)

(2749.) **M. glomerata,** Trin.; Hook., Fl. II., 237.

Polypogon glomeratus, Willd. Enum. I., 87.
P. setosus, Spreng. Mant. I., 31.
P. racemosus, Nutt. Gen. I., 51.
Agrostis racemosa, Michx., Fl. I., 53; Pursh, Fl. I., 65.
A. setosa, Muhl. Gram. 68.
Cinna racemosa, Kunth. Enum. I., 207.

Not uncommon in swamps, and along brooks and rivers. Weldford, Kent Co.; Kennebeccasis, N.B. (*Fowler, Cat.*) Petiticodiac, N.B. (*Brittain.*) Becscie River, and Jupiter River, Anticosti; Madeline River, Gaspé, Q. (*Macoun.*) Vicinity of Chelsea, Q. (*Billings.*) Near Ottawa. (*Fletcher, Fl. Ott.*) Marsh near Prescott Junction, Ont. (*Billings.*) Beaver meadows, North Hastings, Ont.; Big Swamp, Murray, Northumberland Co., Ont. (*Macoun.*) Low grounds, London, Ont. (*Burgess. Millman.*) Vicinity of Hamilton, Ont. (*Logie.*) Point between Shib-wah and Batch-ah-wa-nah rivers, Georgian Bay; Michipicotin River, and Oba Lake, Ont. (*R. Bell.*) Wet bank, twenty-five miles up the Kaministiqua River; also frequent on the margins of lakes and swamps throughout the prairie region, and north-west to Peace River; rather rare in the Rocky Mountains, from Morley to Donald in the Columbia Valley, B.C. (*Macoun.*) South Kootanie Pass, Rocky Mountains. (*Dawson.*) Plains of the Saskatchewan to the Rocky Mountains. (*Hooker, Fl.*)

(2750.) **M. Mexicana,** Trin. Diss. I., 189.

Agrostis Mexicana, Linn.; Muhl. Gram. 67; Pursh, Fl. I., 64.
A. lateriflora, Michx., Fl. I., 53; Pursh, Fl. I., 64.
Cinna Mexicana, Link. Enum. I., 71.

Moist meadows and borders of moist thickets. Fredericton; Petitcodiac, N.B. (*Fowler, Cat.*) Simonds, Carleton Co., N.B. (*Brittain.*)

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On sandy banks of the Rivière Rouge, Argenteuil Co., Q. (*D'Urban.*) Along the rocks, Major Hill Park, Ottawa. (*Fletcher, Fl. Ott.*) Woods near Prescott Junction, and close to Ottawa. (*Billings.*) Low rich land along Cold Creek, at Wooler, Ont.; frequent in meadows and thickets, Hastings Co.; and at Owen Sound, Ont. (*Macoun.*) Point Edward, St. Clair River, Ont. (*J. M. Macoun.*) Near Kingston, Ont. (*Burgess.*) Swampy meadows, near London, Ont. (*Burgess. Millman.*) Vicinity of Hamilton, Ont. (*Logie.*) Manitoulin Island, Georgian Bay. (*Burgess.*) Along Current River, near Port Arthur, Lake Superior. (*Macoun.*)

(2751.) **M. sylvatica,** Torr. & Gray, Gram. & Cyp. I., No. 13.

Agrostis sylvatica, Torr., Fl. I., 87.
A. diffusa, Muhl. Gram. 64.

Rocky beds of streams and by waterfalls. Low rocky places, Fredericton; Belleisle, King's Co., N.B. (*Fowler, Cat.*) Dideguash River, N.B. (*Hay.*) Abundant along the Moira and Trent rivers, in Hastings and Northumberland Co's., Ont. (*Macoun.*) Rocky banks, Moon River, Muskoka Co., Ont. (*Burgess.*) North shore of Lake Superior. (*Agassiz.*)

(2752) **M. Willdenovii,** Trin. Diss. I., 188.

Agrostis tenuiflora, Willd.; Pursh, Fl. I., 63.
Cinna tenuiflora, Link. Enum. I., 71.

Rocky woods, apparently rare. Rocky banks and woods along the Moira, half a mile above the railway bridge, at Belleville, Ont. (*Macoun.*) Rocky wooded bank of river, Niagara Falls. (*Burgess.*) This species is distinguished from *M. Mexicana* by its long-awned palets, and from *M. sylvatica* by its contracted and very slender panicle and short-pointed glumes.

690. BRACHYELYTRUM, Beauv. Agrostogr. 39.

(2753.) **B. aristatum,** Beauv.; Torr., Fl. I., 102.

Muehlenbergia erecta, Schreb.; Pursh, Fl. I., 61.
M. aristata, Pers.; Hook., Fl. II., 237.
M. Brachyelytrum, Trin. Diss. I., 88.
Dilepycum aristosum, Michx., Fl. I., 40.

Rocky woods, not common. In woods at Truro, and Windsor, N.S. (*Macoun.*) Rocky woods, Molus River, Kent Co., N.B. (*Fowler, Cat.*) Montmorency River, Q. (*St. Cyr.*) Woods at Chelsea, Q. (*Billings.*) Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Woods west of Prescott, Ont. (*Billings.*) Rather common in woods throughout central Ontario.

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(*Macoun.*) Vicinity of Hamilton, Ont. (*Logie.*) Rich woods, London, Ont.; Moon River, Muskoka Co., Ont. (*Burgess.*) Owen Sound, and woods at Queenston Heights, Ont.; woods along Current River, near Port Arthur, Lake Superior. (*Macoun.*) Canada. (*Goldie.*)

691. PHLEUM, Linn. Gen. 77. (TIMOTHY-GRASS)

(2754.) **P. alpinum,** Linn.; Hook., Fl. II., 234.

P. Hænkeanum, Presl, Rel. Hænk. I., 245.

Jupiter River, Anticosti. (*Macoun.*) Summit of Mount Albert, Gaspé, Q. (*Macoun. Porter.*) Fort George, James Bay. (*J. M. Macoun.*) North shore of Lake Superior. (*Agassiz.*) Cypress Hills, and on elevated mountain pastures in the Rocky Mountains, and westward to the summit of the Selkirk Range. (*Macoun.*) Abundant on the Little Bow River, and Porcupine Hills; western summit of the North Kootanie Pass, Rocky Mountains; Ilgacho Lake, B.C.; Lake Lindeman, lat. 60°. (*Dawson.*) Cariboo Mountains, alt. 6,000 feet, and Skagit River, B.C. (*Bowman.*) Not rare on mountain slopes at Goldstream, and in mountain woods at Nanaimo, and Qualicum, Vancouver Island. (*Macoun.*) Sitka, and Ounalashka, Kotzebue Sound, and Island of St. Lawrence. (*Rothr. Alask.*) Summits of the Rocky Mountains. (*Hooker, Fl.*) Greenland. (*Lange.*)

(2755.) **P.** PRATENSE, Linn.; Pursh, Fl. I., 65; Hook., Fl. II., 234.

This species is extensively cultivated in every part of Canada, and is found naturalized in all old clearings and aroun i lumber camps and on the forest roads leading to them. It seems as much at home in Newfoundland as in Ontario and Vancouver Island.

692. PHIPPSIA, R. Br., App. Parry Voy. 285.

(2756.) **P. algida,** R. Br.; Hook., Fl. II., 238.

Melville and other Arctic islands. (*Hooker, Fl.*) Pond's Bay, Lancaster Sound. (*Dr. Walker.*) Point Barrow, Arctic coast. (*John Murdoch.*) Cape Chudleigh, and Mansfield Island, Hudson Strait. (*R. Bell.*) West side of Davis Straits. (*J. Taylor.*)

Var. **monandra,** Kunth.

P. monandra, Trin.; Hook., Fl. II., 238.

Kotzebue Sound, and Bay of St. Lawrence. (*Hooker, Fl.*)

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693. SPOROBOLUS, R. Br. (DROP-SEED GRASS.)

(2757.) **S. asperifolius,** Thurber, Bot. Calif. II., 270.

Vilfa asperifolius, Nees. & Meyer, in Trin. Agrost. I., 73.
Sporobolus arenaceus, Buckl. Proced. Acad. Philad. 89, (1862.)

Dry, open prairie, on the east side of Reed Lake, Assiniboia, 1880. (*Macoun.*) Upper valley of the Columbia, near a hot spring, B.C. (*Dawson.*) Chinaman's Ranche, on the Thompson River, B.C. (*Fletcher.*)

(2758.) **S. cryptandrus,** Gray, Man. Ed. II., 542.

Agrostis cryptandra, Torr. Ann. Lyc. N. York, I., 151.
Vilfa cryptandra, Trin. Agrost. I., 47.
V. aspera, Logie, Cat. Hamilton Plants.

On the sands of Presqu'ile Point, Lake Ontario. (*Macoun.*) Along Burlington Beach, near Hamilton, Ont. (*Logie.*) On sand along the lake shore, Toronto Island; Point aux Pins, Lake Erie. (*Burgess.*) Sandy shore, Hamilton, Ont. (*Millman.*) Point Edward, River St. Clair, Ont. (*J. M. Macoun.*) Amongst sand, Stinking Lake, and Mapie Creek, north of Cypress Hills, Assiniboia. (*Macoun.*)

(2759.) **S. cuspidatus,** Scribner, Torr. Bull. IX., 103.

Vilfa cuspidata, Torr.; Hook., Fl. II., 238.
Agrostis cryptandra, Torr. Ann. Lyc. N. York I., 151.

Simonds, Carleton Co., N.B. (*Brittain.*) Rather common on dry prairies, from Manitoba westward to the Rocky Mountains. (*Macoun.*) North Fork of Old Man River, Rocky Mountains. (*Dawson.*) Banks of the Saskatchewan, near the Rocky Mountains, and plains of the Red River. (*Hooker, Fl.*) The limits of this and the next species are so poorly defined that I cannot satisfactorily separate them.

(2760.) **S. depauperatus,** (?) Scribner, Torr. Bull, IX., 103.

Vilfa depauperata, Torr.; Hook., Fl. II., 257.
V. utilis, Torr., Pacif. R. Rep. V., 365.

Amongst gravel along Jupiter River, Anticosti. (*Macoun.*) Hurricane Hills, Assiniboia. (*J. M. Macoun.*) Very common in damp prairie, from Manitoba, Touchwood Hills, and westward and southward across the southern prairie region; damp places in the foot-hills, and westward through the Rocky Mountains to the Columbia Valley, at Donald. (*Macoun.*)

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(2761.) **S. heterolepis,** Gray, Man. Ed. V. 610.

Vilfa heterolepis, Gray, Ann. Lyc. N. York III., 233.

Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) On rocks along the railway at Shannonville, Hastings Co.; and at Heely Falls, Seymour, Northumberland Co., Ont.; very common in north-western Manitoba, and along the Beaver, and Touchwood Hills, Assiniboia. (*Macoun.*) East side of La Cloche Island, Georgian Bay. (*R. Bell.*)

(2762.) **S. vaginæflorus,** Vasey, Cat. Grasses. U. S. 45, (1885.)

Vilfa vaginæflora, Torr.; Gray, Man. Ed. V., 605.

Agrostis Virginica, Muhl. Gram. 74.

On dry barren spots near Ottawa. (*Fletcher, Fl. Ott.*) Very common in many places around Belleville, Ont.; and on roadsides near Campbellford, Northumberland Co., Ont. (*Macoun.*) Vicinity of Hamilton, Ont. (*Logie.*)

NOTE.—Dr. Vasey writes of the *Vilfa tenacissima,* Hook., Fl. II., 239:—"This is now considered a variety of *Sporobolus Indicus,* but I have seen no specimen from so far north as Menzies Island." Believing that it is included in some species we have catalogued, we leave it out.

694. AGROSTIS, Linn. Gen. 80. (BENT-GRASS.)

(2763.) **A. canina,** Linn.; Gray, Man. Ed. V., 611.

A. canina, Linn., var. (?) *tenella,* Torr. Bot. N. York II., 443.

Brigus, Newfoundland. (*R. Bell.*) Molus River, Kent Co., N.B.; in dry barrens. (*Fowler, Cat.*) Sandy beach, Mingan River, Q. (*St. Cyr.*) Crevices of rocks, Rivière Ste. Anne des Monts; and summit of Mount Albert, Gaspé, Q. (*Macoun.*) Ounalashka, 1885. (*Mr. S. Applegate.*)

Var. **paleata,** Vasey, (MS.) N. Var.

Abundant in meadows at Cedar Hill, near Victoria, Vancouver Island, 1887. (*Macoun.*) This is a fine grass and seems to be valuable both as a pasture and meadow grass. A variety of *A. canina* was gathered at Sitka a few years since by Mr. Meehan, which may be this form.

(2764.) **A. exarata,** Trin.; Hook., Fl. II., 239.

A. albicans, Buckl. Proced. Acad. Philad. 91, (1862.)

Polypogon alopecuroides, Buckl. l. c. 88.

A very valuable grass in low grounds and meadows on the Pacific

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coast. Rather common in the valley of Beaver Creek, Selkirk Mountains, B.C. (*Macoun.*) Blunden Harbor, Vancouver Island, and north point of Texada Island, Gulf of Georgia; Queen Charlotte Islands. (*Dawson.*) The usual form is quite common in meadows everywhere on Vancouver Island, and with it an awnless variety, while the coarse Alaskan form is found in ditches and cold, wet places. (*Macoun.*) Ounalashka, and Sitka. (*Rothr. Alask.*) Sitka, Alaska. (*Meehan.*) Ounalashka, 1885. (*Mr. S. Applegate.*)

(2765.) **A. geminata,** Trin.

Oregon to Alaska. (*Vasey.*) Ounalashka. (*Rothr. Alask.*)

(2766.) **A. microphylla,** Steud.; Torr. Pacif. R. Rep. IV., 154.

A. exarata, var. Watson, Bot. King's Exp. V., 377.

North point of Texada Island, Gulf of Georgia. (*Dawson.*) Abundant in exsicated places at Victoria, Oak Bay, Cedar Hill, Nanaimo, and Qualicum, Vancouver Island. (*Macoun.*) Cadboro Bay, near Victoria, Vancouver Island. (*Fletcher.*)

(2767.) **A. oreophila,** Trin.

On an exposed point of rocks, a few hundred yards east of South West Point Lighthouse, Anticosti, August 17, 1883. The specimens are doubtfully referred here by Dr. Vasey, our highest authority on grasses in Ameriea. Dr. Gray in his Manual, page 611, seems to refer this to *A. scabra,* but it cannot be that species as this is perennial (*Macoun.*)

(2768.) **A. perennans,** Tuck; Gray, Man. Ed. V., 611.

A. laxiflora, Rich.; Hook., Fl. II., 240.
Trichodium decumbens, Michx., Fl. I., 42; Pursh, Fl. I., 61.
Cornucopiæ perennans, Walt. Fl. Car. 74.

Open grassy woods, apparently rare. Grand Vallèe, Gaspé, Q. (*Macoun.*) Woods near Hull, Q.; and other places near Ottawa. (*Fletcher, Fl. Ott.*) Sandy banks of the Rivière Rouge, Argenteuil Co., Q. (*D'Urban.*) In grassy woods east of Belleville, Ont. (*Macoun.*) Vicinity of Hamilton, Ont. (*Logie.*) Rocky woods, Kingston, Ont. (*Millman.*)

(2769.) **A. scabra,** Willd. Sp. I., 370.

A. laxiflora, Rich.; Hook., Fl. II., 240, in part.
A. Michauxii, Trin.; Gray, Gram. & Cyp. I., 17.
Trichodium laxifolium, Michx., Fl. I., 42; Pursh, Fl. I., 61.
T. scabrum, Muhl. Gram. 61.

A common grass on exsicated places on hills and mountains, and

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along rivers and lakes, widely spread and variable; apparently biennial. Newfoundland. (*Reeks.*) Halifax Co., N.S. (*Sommers, Cat.*) Common at Truro, and Halifax, N.S. (*Macoun.*) Common throughout New Brunswick. (*Fowler, Cat.*) Thunder River, Q. (*St. Cyr.*) South West Point, and Jupiter River, Anticosti, and along the Gaspé coast, and at Levis, Q. (*Macoun.*) Vicinity of Tadousac, Q. (*A. T. Drummond.*) Abundant at Ottawa. (*Fletcher, Fl. Ott.*) Very abundant in its usual haunts throughout the whole of northern and central Ontario (*Macoun.*) North shore of Lake Superior. (*Agassiz.*) On an old road, Mamainse, Lake Superior. (*R. Bell.*) Vicinity of Hamilton, Ont. (*Logie.*) Manitoulin Island, Georgian Bay. (*Mrs. Saunders.*) Sandy and wet places, London, Ont. (*Burgess. Millman.*) Saugeen, Lake Huron; Parry Sound, Georgian Bay; Lake of the Woods. (*Burgess.*) Oba Lake, Ont.; Nelson and Hayes rivers, Keewatin. (*R. Bell.*) Lake Mistassini, N.E.T.; Severn River, Keewatin; South Twin Island, James Bay; Washow Bay, Lake Winnipeg; and Souris Plain, Man. (*J. M. Macoun.*) Common at the Lake of the Woods; Milk River Ridge, Alberta; Elk River, Kootanie Valley, Rocky Mountains; Ilgacho Brook, B.C.; and Lake Lindeman, lat. 60°, B.C. (*Dawson.*) Very abundant along all the rivers in the prairie region, and northward to Lake Athabasca; very common in suitable places, Vancouver Island. (*Macoun.*) Ounalashka. (*Rothr. Alask.*) Red River, Man. 1827. (*Douglas.*)

(2770.) **A. varians,** Trin., Agrost. II., 68.

A. exarata, var. *β. minor*, Hook., Fl. II., 239.
A. canina, var. *melaleuca*, Bong.; Hook., Fl. II., 240. (?)
A. Drummondii, Torrey, Ms. (*vide* Hooker.)

Valleys of the Rocky Mountains, on the east and west sides of the dividing ridge. (*Hooker, Fl.*) Trinius founded the species on specimens collected by either Douglas or Drummond on the Athabasca Pass, in the Rocky Mountains. (*Macoun.*) Queen Charlotte Islands, 1878. (*Dawson.*) Sitka. (*Hooker, Fl.*) Greenland. (*Lange.*)

(2771.) **A.** VERTICILLATA, Vill. Delph. II., 74.

Vilfa stolonifera, Hook. & Arn. Bot. Beechy, 161. (?)

Apparently introduced at Victoria and Nanaimo, Vancouver Island. (*Macoun.*)

(2772.) **A. vulgaris,** With.; Hook., Fl. II., 239; Pursh, Fl. I., 63.

A. polymorpha, Trin., var. *a.* Diss. I., 202.
A. hispida, Willd. Sp. I., 370.

Very abundant in pastures and meadows throughout the whole

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Dominion of Canada. In the eastern provinces there are both the introduced and indigenous forms, but westward in the Rocky Mountains and British Columbia, especially on Vancouver Island, the indigenous variety is the predominant or only one.

Var. ALBA, Vasey, Cat. Grasses, U. S. 47, (1885.)
A. alba, Linn.; Pursh, Fl. I., 64; Hook., Fl. II., 239.
A. decumbens, Muhl. Gram. 68.

Naturalized in pastures and wet meadows, especially eastward. This and the preceding are invaluable for pasture and permanent meadow land, and are the *Red Top* and *Herd's Grass* of the agriculturalists. Greenland. (*Lange.*)

695. POLYPOGON, Desf. (BEARD-GRASS.)

(2773.) **P.** MONSPELIENSIS, Desf.; Gray, Man. Ed. V., 612.

Waste heaps around Victoria, especially at the head of James Bay, Vancouver Island. (*Fletcher. Macoun.*) Introduced.

(2774.) **P.** LITTORALIS, Smith; Bot. Calif. II., 270.
P. fugax, Boland. Cat. 34.

Refuse heaps at the head of James Bay, Victoria, Vancouver Island. (*Macoun.*) Introduced.

696. ARCTAGROSTIS, Griseb. Ledeb. Fl. Ross. IV., 434.

(2775.) **A. latifolia,** Ledeb. Fl. Ross. IV., 434.
Colpodium latifolium, R. Br.; Hook., Fl. II., 238.
Vilfa arundinacea, Trin. Diss. I.

Cape Chudleigh, Cape Prince of Wales, and Mansfield Island, Hudson Strait. (*R. Bell.*) Nottingham Island, Hudson Bay. (*Mackenzie.*) Arctic sea-coast and islands; Hudson Bay; and Bear Lake, to the shores of the Arctic sea. (*Hooker, Fl.*) Port Kennedy, Lancaster Sound. (*Dr. Walker.*) Between Fort Churchill, and Cape Lady Pelly, Hudson Bay. (*Dr. Rae.*) Greenland. (*Lange.*)

Var. **Alaskensis,** Vasey, Cat. Grasses, U. S. 48, (1885.)
Colpodium latifolium, β. Kunth. (?)
C. arundinaceum, Hook., Fl. II., 238. (?)

Kotzebue Sound, and Arctic coast. (*Rothr. Alask.*) Point Barrow, Arctic coast. (*John Murdock.*)

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697. CINNA, Linn. Gen. 15. (WOOD-REED GRASS.)

(2776.) **C. arundinacea,** Linn.; Michx., Fl. I., 38.

Muehlenbergia Cinna, Trin.; Hook., Fl. II., 237.
Agrostis Cinna, Pursh, Fl. I., 64.

This species and the next have been confounded and mostly reported as *C. pendula,* but they appear quite distinct. Newfoundland. (*Reeks.*) Near Bedford, Halifax Co., N.S. (*Sommers, Cat.*) Woods along Brigham's Creek, near Hull, Q. (*Fletcher, Fl. Ott.*) Rather rare at Belleville, Ont. (*Macoun.*) Swampy soil, London, Ont. (*Burgess. Millman.*) Vicinity of Hamilton, Ont. (*Logie.*) Saskatchewan. (*Hooker, Fl.*)

(2777.) **C. pendula,** Trin.; Vasey, Cat. Grasses, U. S. 49, (1885.)

C. latifolia, Griesb.; Rothrock's Alaskan Plants, 459:
C. arundinacea, Linn., var. *pendula,* Gray, Man. Ed. V., 613.
Muehlenbergia pendula, Bong.; Hook., Fl. II., 237.

Much commoner than the preceding, and more northern in its distribution. A beautiful and conspicuous grass. Damp woods at Whycocogmah, Cape Breton. (*Macoun.*) In deep shady places, Molus and Bass rivers, N. B. (*Fowler, Cat.*) Dideguash River, N.B. (*Hay.*) Salt Lake, Jupiter River, and Becscie River, Anticosti. (*Macoun.*) Ste. Catherine, Jacques Cartier River, Q. (*St. Cyr.*) Sandy banks of the Rivière Rouge, Argenteuil Co., Q. (*D'Urban.*) Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Banks of Nation River, near railway crossing, and and northward; rare, Prescott, Ont. (*Billings.*) Abundant in low, damp woods, along streams and small brooks, throughout central Ontario; also at Port Hope and Owen Sound, and westward all around Lake Superior to the Nipigon River. (*Macoun.*) North shore of Lake Superior. (*Agassiz.*) Wet woods, London, Ont. (*Burgess. Millman.*) Parry Sound, Georgian Bay. (*Burgess.*) Sault Ste. Marie. (*Fletcher.*) Oba Lake, Ont. (*R. Bell.*) Lake Mistassini, N.E.T. (*J. Richardson.*) Loon Strait, Lake Winnipeg. (*J. M. Macoun.*) Abundant in wet woods, northern Manitoba; Cypress Hills, and northward to Edmonton and Peace River; Columbia Valley, and westward through the valleys of the Selkirk Mountains, B.C. (*Macoun.*) Sitka. (*Hooker, Fl.*)

Var. **mutica,** Vasey.

Pelly Banks, lat. 62°, N.W.T., 1887. (*Dawson.*)

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Var. **acutiflora,** Vasey. (MS.) N. Var.

Abundant along the borders of brooks, and in river valleys, throughout the southern part of Vancouver Island, extending to Nanaimo, Qualicum, and Comox; also Alberni, on the west coast. (*Macoun.*)

698. DEYEUXIA, Clarion. (REED-BENT GRASS.)

(2778.) **D. æquivalvis,** Benth. & Hook., Gen. Plant III., 1153.

A. æquivalvis, Trin. Agrost. II., 116; Macoun, Cat. No. 2128, b.

A. canina, var. *æquivalvis,* Trin.; Bong. Veg. Sitch. 171.

A. canina, Linn., *β. melaleuca,* Bong.; Hook., Fl. II., 240. (?)

A. Hillebrandii, Thurber; Boland. Trans. Calif. Agri. Soc. 136, (1864.)

Rather common on the grassy beds of snow-slides, at Roger's Pass, Selkirk Mountains, B.C. (*Macoun.*) Sitka, and Ounalashka. (*Rothr. Alask.*) Summits of the Rocky Mountains. (*Hooker, Fl.*)

(2779.) **D. Aleutica,** Vasey, Cat. Grasses, U. S. 50, (1885.)

Calamagrostis Aleutica, Trin.; Hook., Fl. II., 241; Macoun, Cat. No. 2140.

C. albicans, Buckl. Proced. Acad. Philad. 92, (1862.)

Crevices of rocks along the west coast of Vancouver Island and in marshes, covered at high tide, on the Alberni Canal. (*Macoun.*) Queen Charlotte Islands. (*Dawson.*) Sitka. (*Barclay.*) Ounalashka, and Sitka. (*Rothr. Alask. & Hooker, Fl.*) Ounalashka, 1885. (*Mr. S. Applegate.*)

(2780.) **D. breviaristata,** Vasey, Bull. Torr. Club XV., 48, N. Sp.

"Culm 2-3 feet high, radical leaves very long, panicle 4 inches long, narrow and loose, branches unequal, verticills numerous, the longer ones about 1 inch long, erect, flowering, mostly to the base—empty glume 2 lines long, very narrow, acute, membranaceous, scabrous on the keel; flowering glumes as long as the empty ones, and about the same texture, lanceolate, acutish, 3 nerved, smoothish; awn from about the middle, shorter than the fl. gl. or sometimes nearly absent; hairs rather sparse and fine, $\frac{1}{3}$ to $\frac{1}{2}$ as long as the fl. gl., those of the pedicel scanty but longer; palet as long as its glume, acute."

In crevices of rocks amongst the islands in the outer part of Barclay Sound, near Cape Beale, Vancouver Island. (*Macoun.*)

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(2781.) **D. Canadensis,** Hooker, Arc. Pl. 307 & 308.

Calamagrostis Canadensis, Beauv.; Hook., Fl. II., 240; Macoun, Cat. No. 2135.
C. Mexicana, Nutt. Gen. I., 46.
C. Purshii, Kunth, Enum. I., 208.
Arundo Canadensis, Michx., Fl. I., 73; Pursh, Fl. I., 86.
A. cinnoides, Muhl. Gram. 187.
A. agrostoides, Pursh, Fl. I., 86.

An abundant and valuable species extending from Newfoundland and the Atlantic provinces throughout the whole northern and central forest region, and Rocky Mountains and British Columbia, to the islands on the Pacific coast and north to Alaska.

(2782.) **D. confinis,** Kunth; Vasey, Grasses of U. S. 28, (1883.)

Calamagrostis confinis, Nutt. Gen. I., 46.
C. inexpansa, Gray, Gram. & Cyp. I., No. 20.
Arundo confinis, Willd. Enum. I., 127.

Chiefly included by collectors in *D. neglecta* or *Calamagrostis stricta.* Vicinity of Hamilton, Ont. (*Logie.*) Rocky woods, Elziver, North Hastings, Ont.; woods along the North Saskatchewan, above Fort Carleton, and at Edmonton, lat. 53°; on gravel at Kananaskis station, Rocky Mountains; shores of Horne Lake, and Cameron Lake, Vancouver Island. (*Macoun.*)

(2783.) **D. crassiglumis,** Vasey, Cat. Grasses, U. S., 50, (1885.)

Calamagrostis crassiglumis, Thurber, Bot. Calif. II., 281.

Nimpkish or Karmutzen Lake, Vancouver Island. (*Dawson.*) In gravel along the shores of Horne Lake, near Qualicum, Vancouver Island. (*Macoun.*)

(2784.) **D. deschampsioides,** Vasey, Cat. Grasses U. S. 50, (1885.)

Calamagrostis deschampsioides, Trin. Spec. Gram. III., 354.

California to Alaska. (*Vasey.*) We know nothing of this species.

(2785.) **D. Langsdorffii,** Kunth, Gram. I., 77.

Calamagrostis Langsdorffii, Trin.; Macoun, Cat. No. 2136.
C. Oregonensis, Buckl. Proced. Philad. Acad., 92, in part, (1862.)

Magdalen Islands, Gulf of St. Lawrence. (*McKay.*) Low grounds at Whycocomagh, Cape Breton. (*Macoun.*) Campbellton, N.B. (*Chalmers.*) Thunder River, Q. (*St. Cyr.*) Salt Lake, Anticosti; Current River, near Port Arthur, Lake Superior. (*Macoun.*) Port Arthur. (*Burgess.*) Fort George, James Bay. (*J. M. Macoun.*) North end of

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Lake Winnipeg, and west coast of Hudson Bay. (*R. Bell.*) Upper Nachacco River, B.C. (*Dawson.*) Shores of Shawnigan Lake, Vancouver Island. (*Macoun.*) Kotzebue Sound. (*Rothr. Alask.*) Queen Charlotte Islands. (*Dawson.*) Fort Wrangel, Alaska. (*Meehan.*) Ounalashka, 1885. (*Mr. S. Applegate.*)

(2786.) **D. Lapponica,** Kunth; Vasey, Cat. Grasses U. S. 51, (1885.)

Calamagrostis Lapponica, Gray, Man. Ed. V., 682; Macoun, Cat. No. 2141.

Isle Royal, Lake Superior. (*Prof. T. C. Porter.*) Salt Lake, Anticosti; Otter Head, and Pic River, Lake Superior; Flat Rock Portage, Nipigon River, Ont. (*Macoun.*)

(2787.) **D. Macounlana,** Vasey, Coulter's Bot. Gaz., X., 297, N. Sp.

"Culm 60 to 90 cm. high, slender, leafy; sheaths mostly as long as as the internodes, smoothish; ligule about 2 mm. long, lacerate leaf blades narrow, 15 to 25 cm. long, attenuated to a filiform point; panicle 10 to 12 cm. long, narrow, open, 2 to 4 cm. in width, branches mostly in fives, approximate, slender, erect; spikelets somewhat crowded on the upper part of the branches, 2 mm. long; empty glumes nearly equal, purplish, lanceolate, acute, finely scabrous on the back; flowering glumes 1½ mm. long, ovate-oblong, somewhat truncate and 2-lobed at the apex, the lobes finely denticulate; awn above the middle of the glume, straight, reaching to the apex; palet about one-third shorter than its glume, bifid, denticulate at apex; hairs copious, as long as the flowering glume. The panicle resembles that of *Agrostis vulgaris,* and the flowers are smaller than those of any other of our species."—(Dr. Geo. Vasey in Bot. Gazette, Vol. X., page 297.) Black River, Lake Winnipeg, 1884; Souris Plain, Man. 1883. (*J. M. Macoun.*)

(2788.) **D. neglecta,** Kunth, Gram. I., 76.

D. stricta, Coulter, Man. Ry. Mount. Pl., 414.
Calamagrostis coarctata, Hook., Fl. II., 240.
C. stricta, Beauv.; Hook., Fl. II., 240; Macoun, Cat. No. 2138.

Borders of rivers and lakes in the east, and in swampy meadows on the prairie. Amherst Island, Magdalen Islands. (*J. Richardson.*) Shediac, N.B. (*Fowler, Cat.*) Becscie River, Anticosti; and at Cape Rosier, Gaspé coast, Q. (*Macoun.*) Ellis Bay, Anticosti. (*St. Cyr.*) Shore of Lake Huron, at Chicken Bay. (*Macoun.*) Lake Mistassini, N.E.T. (*J. M. Macoun.*) York Factory, Hudson Bay. (*R. Bell.*) Abundant in wet prairie throughout Manitoba and the northern prairie region, and north-westerly through the wooded country to

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the Peace River; common along slopes and by ponds through the Rocky and Selkirk mountains, and in northern British Columbia. (*Macoun.*) Pelly Banks, lat. 62°; and confluence of Lewes and Pelly rivers, lat. 62° 47′, N.W.T. (*Dawson.*) Kotzebue Sound. (*Rothr. Alask.*) Quebec; Saskatchewan and English rivers, through the wooded country to the Rocky Mountains; Nootka, and Observatory Inlet, Pacific coast. (*Hooker, Fl.*) Red River, Man., 1827. (*Douglas.*)

Var. **Americanum,** Vasey. (MS.) N. Var.

This is a very beautiful form, stouter and much lighter colored than the species. Rather common at Donald in the Columbia Valley, 1885. (*Macoun.*)

Var. **brevifolia,** Vasey. (MS.) N. Var.

This variety, as its name indicates, has short involute leaves and a narrow panicle. It is a little over a foot in height and may be only a depauperate form of the species. (*Macoun.*) Pelly Banks, lat. 62°, N.W.T., 1887. (*Dawson.*) Damp slopes, near McLeod's Lake, lat. 55°, B.C. (*Macoun.*)

Var. **robusta,** Vasey. (MS.) N. Var.

A very tall and stout variety growing in water or along the borders of marshes throughout Manitoba and the Saskatchewan region; Hand Hills, Alberta. (*Macoun.*) Souris Plain, Man. (*J. M. Macoun.*)

(2789.) **D. Pickeringii,** Vasey, Cat. Grasses, U. S. 51, (1885.)

Calamagrostis Pickeringii, Gray, Man. Ed. V., 616; Macoun, Cat. No. 2142.

The only known station for this species in Canada is in the wet meadows surrounding Louisburg, Cape Breton, 1883. (*Macoun & Burgess.*)

(2790.) **D. Porteri,** Vasey, Cat. Grasses, U. S. 51, (1885.)

Calamagrostis Porteri, Gray, Man. Ed. V., 615.

Specimens referred here by Dr. Vasey were collected on the slopes of the mountains at the entrance to Bow River Pass, in the Rocky Mountains, 1879. Better specimens are needed to settle the identity of the species. (*Macoun.*)

(2791.) **D. purpurascens,** Kunth; Vasey, Cat. Grasses U.S. 51, (1885.)

Calamagrostis purpurascens, R. Br.; Hook., Fl. II., 240.

Arctic sea-shore. (*Hooker, Fl.*) Fort Yukon. (*Rothr. Alask.*) Greenland. (*Lange.*) Dr. Vasey, writes me that Torrey thought this was *D. sylvatica.* I am of the same opinion, as the purple glumes are a very poor character.

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(2792.) **D. rubescens,** Vasey, Cat. Grasses, U. S. 51, (1885.)

Calamagrostis rubescens, Buckl. Proced. Phil. Acad., 92, (1862.)

Quite common on burnt slopes in the Rocky Mountains, from Banff westward to Roger's Pass, Selkirk Mountains, B.C. (*Macoun.*)

(2793.) **D. strigosa,** Kunth; Vasey, Cat. Grasses U.S. 51, (1885.)

Calamagrostris strigosa, Bong.; Hook., Fl. II., 241.

Sitka. (*Bongard* vide *Hooker.*)

(2794.) **D. sylvatica,** Kunth; Vasey, Grasses of U. S. 51, (1885.)

Calamagrostis sylvatica, DC.; Macoun, Cat. No. 2137.
C. purpurascens, R. Br.; Hook., Fl. II., 240, in part.

Apparently a mountain species, extending far to the north. Old Bow Fort, near Morley, (1879), and very common westward on dry gravelly slopes through the Rocky Mountains to Roger's Pass, in the Selkirks, B.C. (*Macoun.*) Crow Nest Pass, Rocky Mountains; Lewes River, lat. 62°, Pelly Banks, lat. 62°, and Dease River, lat. 59°, N.W.T., and B.C. (*Dawson.*) Bennett's Lake, Lewes R., B.C. (*W. Ogilvie.*) Rocky Mountains. (*Hooker, Fl.*)

(2795.) **D. Suksdorfii,** Scribner, Bull. Torr. Club XV., 9.

This is an uncommon grass on the burnt ridges covered with *Pinus Murrayana* at Castle Mountain, Rocky Mountains; and Donald, Columbia Valley. (*Macoun.*) South Kootanie Pass, Rocky Mountains, 1883. (*Dawson.*)

(2796.) **D. borealis.**

An imperfectly characterized species, having the general appearance of *D. Lapponica,* has been named (by Dr. Vasey) *D. Vancouverensis,* in Bulletin Torrey Botanical Club, Vol. XV., 48. It is indicated as a "small species, 10 or 12 inches high, with spicate panicle 1½ to 2 inches long, approaching *D. strigosa,* Kunth." It grows plentifully in water at Fort George, James Bay. Collected July 1887. (*J. M. Macoun.*) With Dr. Vasey's permission I have changed the name to the above, which is more in accordance with the locality where found.

(2797.) **D. Columbiana.**

This species is related to *D. Aleutica,* but the specimens are very poor and difficult to characterize. Collected at Ta-gish Lake, Lewes River, N.W.T., Sept. 1887. (*Dawson.*)

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699. AMMOPHILA, Host. Gram. Austr. IV., 24. (SAND-GRASS.)

(2798.) **A. arundinacea,** Host.; Hook., Fl. II., 241.

Arundo arenaria, Linn.; Michx., Fl. I., 73; Pursh, Fl. I., 87.

Psamma littoralis, Beauv. Agrost. 143.

Calamagrostis arenaria, Trin.; Gray, Man. Ed. V., 616; Macoun, Cat. No. 2139.

Apparently a rare grass on sea beaches and on the shores of the Great Lakes. St. John, and Kouchibouguac, N.B. (*Fowler, Cat.*) Sands of Wellington Beach, Prince Edward Co., Ont.; very abundant on sand at Pic River, Lake Superior. (*Macoun.*) North shore of Lake Superior. (*Agassiz.*)

(2799.) **A. longifolia,** Benth. & Hook. Gen. Plant III., 1153.

Calamagrostis longifolia, Hook., Fl. II., 241; Macoun, Cat. No. 2134.

Very abundant throughout the whole prairie region on sandy ridges, and extending westward to Morley at the base of the Rocky Mountains. (*Macoun.*) Milk River, north of West Butte, lat. 49. (*Dawson.*) Souris Plain, Assiniboia. (*J. M. Macoun.*) Saskatchewan River. (*Hooker, Fl.*) I place this species with *Ammophila,* in deference to Bentham and Hooker. Dr. Vasey doubts the correctness of this disposition of it.

700. AIRA, Linn. Gen. 81. (HAIR-GRASS.)

(2800.) **A.** CARYOPHYLLEA, Linn.; Gray, Man. Ed. V., 642.

Introduced and naturalized and very abundant in all the old clearings and oak woods in the southern part of Vancouver Island. (*Macoun. Fletcher.*)

(2801.) **A.** PRÆCOX, Linn.; Gray, Man. Ed. V., 641.

Avena præcox, Beauv.

Introduced and naturalized with the preceding in the southern part Vancouver Island. (*Macoun. Fletcher.*)

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701. DESCHAMPSIA, Beauv.

(2802.) **D. atropurpurea,** Scheele; Vasey, Cat. Grasses U. S. 53, (1885.)

Aira atropurpurea, Wahl.; Gray, Man. Ed. V., 642; Macoun, Cat. No. 2234.

Apparently confined to the mountains of eastern Quebec, and northeastward. Summit of Mount Albert, Shickshock Mountains, Q. (*Macoun. Porter.*) Lake Mistassini, N.E.T. (*J. M. Macoun.*)

Var. **minor,** Vasey, Bull. Torr. Club XV., 48.

"Culms 10–12 inches high, slender, panicle few-flowered, spikelets much smaller than the type." Grassy glades in woods at Fort George, James Bay, six miles from the coast, 1887. (*J. M. Macoun.*)

Var. **latifolia,** Scribner.

D. latifolia, Vasey, Grasses of U. States, 53, (1885.)
Aira atropurpurea, Wahl.; Hook., Fl. II., 243.
A. latifolia, Hook., Fl. II., 243; Macoun, Cat. No. 2237.

Abundant in the Rocky Mountains, from Canmore westward to Roger's Pass, Selkirk Mountains. (*Macoun.*) Quesnel Lake, 2,200 feet alt., B.C. (*Bowman.*) Rocky Mountains. (*Hooker, Fl.*) Sitka, Ounalashka, and from Point Barrow to Mackenzie River. (*Rothr. Alask.*)

(2803.) **D. brevifolia,** R. Br.; Hook., Fl. II., 242.

Aira arctica, Spreng. Bot. Gazette, X., 366.

Vicinity of Fort Conger, Grinnell Land, lat. 81° 44′. (*Lieut. Greely.*) Arctic sea-shore and islands. (*Hooker, Fl.*) Greenland. (*Lange.*)

(2804.) **D. cæspitosa,** Beauv.; Hook., Fl. II., 242.

Aira cæspitosa, Linn.; Pursh, Fl. I., 77; Macoun, Cat. No. 2239.
A. ambigua, Michx., Fl. I., 61.

Abundant in bunches along river banks, from the Atlantic to the Pacific. Newfoundland. (*Rev. A. Waghorne.*) Magdalen Islands, N.S. (*McKay.*) Cape Forteau, Yarmouth, N.S. (*Macoun & Burgess.*) Kennebeccasis, Tabusintac, on the Bathurst Road, Restigouche, N. B. (*Fowler, Cat.*) Sheldrake River. and L'Ange-Gardien, Q. (*St. Cyr.*) Crevices of rocks, Jupiter River, and English Bay, Anticosti; along the Madeline and Ste. Anne des Monts rivers, Gaspé, Q. (*Macoun.* Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Rocky banks of rivers throughout central and northern Ontario, and extending to Lake

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Nipigon, and Rainy Lake. (*Macoun.*) Saugeen, Lake Huron, and at Port Arthur, Lake Superior. (*Burgess.*) Lake Mistassini, N.E.T.; Severn River, Keewatin; Moose Mountain Creek, Assiniboia. (*J. M. Macoun.*) Michipicotin River, and Oba Lake, Ont.; Oxford House, Keewatin. (*R. Bell.*) North Fork of Old Man River, Rocky Mountains; Lewes River, lat. 62°, and Pelly Banks, lat. 62°, N. W. T. (*Dawson.*) Not rare along the Saskatchewan and all its branches, and extending north to Peace River, and west through the Rocky Mountains to the Columbia Valley. (*Macoun.*) Saskatchewan to Bear Lake. (*Hooker, Fl.*) Ounalashka, and the mainland of Alaska. (*Rothr. Alask.*)

Var. **arctica,** Vasey, Cat. Grasses U.S. 53, (1885.)

D. cæspitosa, var. *β. major,* Hook., Fl. II., 241.

Arctic sea-coast. (*Hooker, Fl.*) Kotzebue Sound, Ounalashka, Sitka, and the interior of Alaska. (*Rothr. Alask.*)

Var. **Bottnica,** Vasey, Cat. Grasses U.S. 53, (1885.)

D. Bottnica, Wahl.; Trin. Icon. t. 255.

Shores of the Gulf of Georgia, and Queen Charlotte Islands. (*Dawson.*) Sitka. (*Rothr. Alask.*) Port Etches, Alaska. (*Barclay.*)

Var. **longiflora,** Trin.; Vasey, Cat. Grasses U.S. 53, (1885.)

Abundant in salt marshes at the mouth of the Nanaimo River, and along all the coasts of Vancouver Island, either under this form or the preceding one. (*Macoun.*) Ounalashka. (*Rothr. Alask.*) Vancouver city, B.C. (*Prof. Fowler.*) Queen Charlotte Islands, B.C. (*Dawson.*)

Var. **maritima,** Vasey, Bull. Torr. Club, XV., 48, (N. Var.)

This is a very depauperate form, only 6–8 inches high, collected on the South Twin Island, James Bay, by J. M. Macoun, 1887.

(2805.) **D. calycina,** Presl, Rel. Hænk. I., 251.

D. danthonioides, Munro; Benth. Pl. Hartweg. 342.

Aira danthonioides, Trin.; Hook., Fl. II., 243; Macoun, Cat. No. 2240.

Abundant in desicated places near Victoria, on Mount Tolmie, Cedar Hill, at Goldstream, and Nanaimo, Vancouver Island. (*Macoun.*)

(2806.) **D. elongata,** Munro.; Benth. Pl. Hartweg. 342.

Aira elongata, Hook., Fl. II., 243; Macoun, Cat. No. 2235.

Abundant in numerous places on dry gravelly soil throughout the southern part of Vancouver Island, at Cedar Hill, Goldstream, Chemainus, Nanaimo, Qualicum, and Alberni. (*Macoun.*) Near Victoria, Vancouver Island. (*Fletcher.*)

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(2807.) **D. alba,** Rœm. & Schultz. Syst. II., 688.

Aira flexuosa, Linn.; Pursh, Fl. I., 77; Hook., Fl. II., 243; Macoun, Cat. No. 2238.

Not rare on rocky soil in the eastern part of Canada. Newfoundand. (*Reeks.*) Ungava Bay, Labrador. (*Barnston.*) Nain, coast of Labrador. (*R. Bell.*) Near Bedford, Halifax Co., N.S. (*Sommers, Cat.*) Abundant at Kingston, Pirate's Cove, and near Halifax, N.S. (*Macoun.*) Rocky banks, Yarmouth, N.S. (*Burgess.*) On rocks near the mouth of the Kennebeccasis, N.B. (*Fowler, Cat.*) Ellis Bay, Anticosti. (*St. Cyr.*) Tadousac River, St. Lawrence, Q. (*A. T. Drummond.*) Mount Albert, Shickshock Mountains, Gaspé, Q. (*Macoun. Porter.*) Pine grove, two miles west of Prescott, Ont. (*Billings.*) Rocky banks of North River, Belmont, Peterboro Co.; crevices of rocks, Hooper's Lake, Hasting's Co.; Jones Falls, near Owen Sound; among rocks, Queenston Heights, Niagara River; Little Flat Rock Portage, Nipigon River; along Thunder Bay, at Port Arthur, and twenty miles up the Kaministiqua, west of Lake Superior. (*Macoun.*) Vicinity of Hamilton, Ont. (*Logie.*) Lake Mistassini, N.E.T. (*J. M. Macoun.*) Greenland. (*Lange.*)

702. HOLCUS, Linn. Gen. 1146. (MEADOW SOFT-GRASS)

(2808.) **H.** LANATUS, Linn.; Gray, Man. Ed. V., 642.

Introduced from Europe and cultivated in the maritime provinces and British Columbia. Moist meadows and roadsides at Digby, and Annapolis, N.S. (*Macoun.*) Meadows, near London, Ont. (*Burgess. Millman.*) Not uncommon at Cedar Hill, and Goldstream, Vancouver Island. (*Macoun.*)

703. TRISETUM, Pers. Syn. Pl. I., 97.

(2809.) **T. canescens,** Buckl. Proced. Acad. Philad. 100, (1862.)

T. elatum, Boland. Cat. 34.

Not uncommon on rocky soil in the southern part of Vancouver Island, at Cedar Hill, Goldstream, Nanaimo, and Horne Lake, near Qualicum. (*Macoun.*) Near Sooke, Vancouver Island. (*Dawson.*) At Agassiz Station, B.C. (*Fletcher.*)

(2810.) **T. cernuum,** Trin.; Hook., Fl. II., 244.

Abundant in grassy and damp woods at Oak Bay, Cedar Hill, and

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Nanaimo, Vancouver Island. (*Macoun.*) Mount Finlayson, and Sooke, Vancouver Island. (*Fletcher.*)

(2811.) **T. subspicatum,** Beauv.; Hook., Fl. II., 244.
T. airoides, Rœm. & Schultz.

Rocky margins of cliffs and ravines from Morley westward through the Rocky and Selkirk mountains, and northward in British Columbia to Fort McLeod, lat. 55°. (*Macoun.*) Eastern summit of North Kootanie Pass, Rocky Mountains; Upper Liard River, lat. 60°, Pelly Banks, lat. 62°, Frances Lake, Finlayson Lake, and hills north of that lake, N.W.T. (*Dawson.*) Ounalashka, and Kotzebue Sound; and from Point Barrow to Mackenzie River. (*Rothr. Alask.*) Greenland. (*Lange.*)

(2812.) **T. subspicatum,** Beauv., var. **molle,** Gray, Man. Ed. V.
T. molle, Trin. Mem. Acad. St. Petersb. 64, (1831.)
Avena mollis, Michx., Fl. I., 72; Pursh, Fl. I., 86.

Very common on rocky banks of rivers and lakes particularly northward. Nain, coast of Labrador; Cape Chudleigh, Cape Prince of Wales, and Digge's Island, Hudson Strait; Port Churchill, Hudson Bay. (*R. Bell.*) Newfoundland. (*Reeks.*) On rocky banks, Restigouche River; Upper Gaspereaux and Upper St. John rivers, N. B. (*Fowler, Cat.*) Manowin Island, Seven Islands Bay, and Grand Isle, Mingan, Q. (*St. Cyr.*) Rivière de Brig, and Jupiter River, Anticosti, Madeline river, Gaspé, Q.; crevices of rocks, Partridge Lake, Addington Co.; sand hills, near Port Hope; and at Oak Hill Pond, Hastings Co.; along Gull River, Victoria Co.; very abundant around Lake Superior and Lake Nipigon. (*Macoun.*) Along the north shore of Lake Superior. (*Agassiz.*) Shore of James Bay north to Cape Jones; Severn River to Hudson Bay, and north to York Factory. (*J. M. Macoun.*) Michipicotin River, Ont. (*R. Bell.*) Middle Branch of North Fork of Old Man River, Rocky Mountains; Skagit summit, Hope trail, B.C. (*Dawson.*) On damp slopes throughout the Rocky and Selkirk mountains; on the summit of Mount Mark, Vancouver Island. (*Macoun.*) Rocky Mountains to the Arctic sea-shore and islands. (*Hooker, Fl.*)

704. AVENA, Linn. Gen. 91. (OAT-GRASS.)

(2813.) **A.** FATUA, Linn. (Wild Oats.)

This species is reported from many parts of Ontario and Manitoba, but the only specimen we have ever seen of it is from Moosomin, in Assiniboia. It makes very good fodder, but as a grain is of no value.

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(2814.) **A. pratensis,** var. **Americana,** Scribner.

A. versicolor, Vill.; Hook., Fl. II., 244.

Abundant on the prairie, from Portage la Prairie westward to the boundary of Manitoba. (*Macoun.*) Souris Plain, near Moose Mountain, Assiniboia. (*J. M. Macoun.*) On gravelly banks around Morley, in the foot-hills of the Rocky Mountains. (*Macoun.*) Rocky Mountains. (*Hooker, Fl.*) Brandon, Man. (*Prof. Fowler.*)

(2815.) **A. striata,** Michx., Fl. I., 27; Pursh, Fl. I., 86; Hook., Fl. II., 244.

Rather uncommon in woods and thickets over a wide area. Bass River, Tabusintac, on Bathurst Road; Upper St. John, and Petitcodiac, N. B. (*Fowler, Cat.*) St. Remi, Q. (*McGill Coll. Herb.*) Mount Albert, Gaspé, Q. (*Porter.*) Common in woods at Ottawa. (*Fletcher, Fl. Ott.*) Miriwin's Woods, near Prescott, Ont.; rather rare. (*Billings.*) Mount Albert, Gaspé, Q.; Carleton Place, near Ottawa; quite common in rocky woods at Belleville, Ont.; woods, Red Bay, Lake Huron. (*Macoun.*) Lake Medad, near Hamilton, Ont. (*Logie.*) Rich wooded banks, London, Ont. (*Burgess. Millman.*) Lake Nipigon, and on dry places generally around Lake Superior, and westward up the Kaministiqua. (*Macoun.*) Emerson, Man. (*Burgess.*) Winnipeg, and North West Angle road, Man. (*Dawson.*) Portage la Prairie, and westward to Fort Ellice; rather uncommon on the lower slopes of the Rocky Mountains, from Canmore westward to the Columbia Valley. (*Macoun.*) Montreal to the Rocky Mountains. (*Hooker, Fl.*) Red River, Man., 1827. (*Douglas.*)

(2816.) **A.** ANNUA, Linn. (Cultivated Oat.)

Successfully grown in every part of Canada, and producing enormously in the prairie region and British Columbia. It is cultivated as far north as Fort Norman, at the mouth of Great Bear Lake River, lat. 65°, long. 123°, west.

705. Arrhenatherum, Beauv. (OAT-GRASS.)

(2817.) **A.** AVENACEUM, Beauv.; Gray, Man. Ed. V., 642.

Cultivated on lawns and sometimes in meadows. Kingston, Ont. (*Millman.*) Lawns at Belleville, Ont. (*Macoun.*) Sandy meadows, London, Ont. (*Burgess.*) Cadboro Bay, and Cedar Hill, Vancouver Island. (*Macoun.*)

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706. DANTHONIA, DC. (WILD OAT-GRASS.)

(2818.) **D. Californica,** Bolander, Proc. Calif. Acad. II., 182.

Rather common in tufts at Old Wives Lakes, east end of Red Deer Lakes, and west of Calgary, through the foot-hills of the Rocky Mountains to Canmore, within the mountains; rather common on dry soil around Cedar Hill, and throughout the southern part of Vancouver Island, and Nanaimo, Qualicum, and Alberni. (*Macoun.*) North point of Texada Island, B.C. (*Dawson.*) Near Victoria, Vancouver Island. (*Fletcher.*) The Vancouver Island form is between the species and *D. unispicata,* and seems to unite them.

(2819.) **D. intermedia,** Vasey.

A most interesting grass in its peculiar range and change of habit. Along Jupiter River, Anticosti; summit of Mount Albert, Gaspé, Q., alt. 4,000 feet; very abundant in the prairie region, from Portage la Prairie westward to the source of the Qu'Appelle; on the Cypress Hills, and from Calgary westward through the Bow River Pass, Rocky Mountains, to the Columbia Valley; at Goldstream, Wellington Mine, Departure Bay, summit of Mount Mark, near Qualicum, and on rocks along Barclay Sound, Vancouver Island. (*Macoun.*) Prairies at Emerson, Man. (*Burgess.*) Red River, Man., 1827. (*Douglas.*)

(2820.) **D. spicata,** Beauv.; Hook., Fl. II., 244.

Avena spicata, Linn.; Pursh, Fl. I., 86.
A. glumacea, Michx., Fl. I., 73.

Dry sandy woods, from the Atlantic to the Pacific; not rare but local. Dry banks, Pictou, N.S. (*Macoun & McKay.*) Baddeck, Cape Breton. (*Burgess.*) Dry soil, Glenelg, Guysboro Co., N.S. (*Faribault.*) Dry barrens; common at Bass River, N.B. (*Fowler, Cat.*) Tobique River, N.B. (*Hay.*) Montmorency River, Q. (*St. Cyr.*) Tadousac, Q. (*A. T. Drummond.*) Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Abundant in sandy meadows and almost everywhere around Prescott, Ont. (*Billings.*) Very common on all dry and sandy soils at Belleville, and westward to Red Bay, Lake Huron. (*Macoun.*) Vicinity of Hamilton, Ont. (*Logie.*) Port Colborne, Lake Erie. (*McGill Coll. Herb.*) Sandy woodlands, London, Ont. (*Burgess. Millman.*) Lake of the Woods. (*Burgess.*) Little Flat Rock Portage, Lake Nipigon; twenty-five miles up the Kaministiqua, and on sandy soil around Lake Superior; Red Deer River, lat. 53°, Man.; rather common in the Rocky Moun-

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tains, at Hector, and on dry slopes, Columbia Valley; sandy woods, Nanaimo, and at Sproat Lake, Alberni, Vancouver Island. (*Macoun.*)

Specimens approaching *D. sericea* were gathered at Saugeen, Ont., by Dr. Burgess, and by myself at Red Bay, Lake Huron, and Red Deer River, Man. The Vancouver Island specimens approach *D. intermedia*, and it seems to me that further examination will reveal the existence of intermediate forms uniting all three in one multiform species.

(2821.) **D. unispicata,** Munro. in Herb.

D. Californica, var. *unispicata*, Thurber, Bot. Calif. II., 294.

Not uncommon on the south and south-western slopes of the Cypress Hills, Alberta. (*Macoun.*) Vancouver Island. (*Fletcher.*)

707. CYNODON, Pers. (BERMUDA GRASS.)

(2822.) **C.** DACTYLON, Pers.; Gray, Man. Ed. V., 622.

Introduced on ballast heaps and becoming naturalized at Nanaimo, Vancouver Island. (*Macoun.*)

708. SCHEDONNARDUS, Steud. Syn. Pl. Glum. I., 146

(2823.) **S. Texanus,** Steud.; Vasey, Cat. Grasses U. S. 61, (1885.)

Lepturus paniculatus, Nutt.; Macoun, Cat. No. 2215.

On dry slopes at Old Wives Lakes, and Eagle Creek, near the Bad Hills, Assiniboia. (*Macoun.*) Milk River, Alberta. (*Burgess.*) Near Wood Mountain, Assiniboia. (*Dawson.*) Turtle Mountain, Man. (*Millman.*)

709. BOUTELOUA, Lagasca. "GRAMA GRASS."

(2824.) **B. hirsuta,** Lag.; Gray, Man. Ed. V., 621.

B. fœna, Torr.

Apparently rare in the prairie region or more probably overlooked Only noticed south of the Cypress Hills, Alberta. (*Macoun.*)

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(2825.) **B. oligostachya,** Torr.; Gray, Man. Ed. V., 621.
Atheropogon oligostachyum, Nutt., Gen. I., 78.
Chondrosium oligostachyum, Torr. in Marcy's Rep., 300.
Eutriana oligostachyum, Kunth; Hook., Fl. II., 242.

Abundant on the dry prairie from Winnipeg westward to the Rocky Mountains, and especially southward of the Canadian Pacific Railway. (*Macoun.*) Plains of the Saskatchewan to the Rocky Mountains. (*Hooker, Fl.*) Turtle Mountain, Man.; and Côteau de Missouri, Assiniboia. (*Burgess.*)

(2826.) **B. racemosa.** Lag.; Vasey, Cat. Grasses U.S. 63, (1885.)
B. curtipendula, Gray, Man. Ed. V., 621.
Chloris curtipendula, Michx., Fl. I., 159.
Atheropogon apludoides, Wahl.; Pursh, Fl. I., 75.
Eutriana curtipendula, Trin. Diss. I., 243.
Cynosurus secundus, Pursh, Fl. II., 728.

A very rare and beautiful species, on rocky banks. On dry limestone rocks at Heely Falls, River Trent, Northumberland Co.; rocky bank along the Grand Trunk Railway, east of Shannonville Station, Hastings Co., Ont. (*Macoun.*) Fort Garry, Man. (*Burgess.*) Stony Mountain, Man. (*Fletcher.*)

710. PHRAGMITES, Trin. (REED-GRASS.)

(2827.) **P. communis,** Trin.; Hook., Fl. II., 241.
Arundo Phragmites, Linn.; Pursh, Fl. I., 86.

In ponds and marshes and by lake margins, from the Atlantic westward to the Pacific. At Truro, and Windsor, N.S. (*Macoun.*) Restigouche, St. Stephen, and Sackville, N.B. (*Fowler, Cat.*) Restigouche River, opposite Campbellton, N.B.; also Jupiter River, Anticosti. (*Macoun.*) Prescott and Ottawa railway bridge, Ottawa. (*Fletcher, Fl. Ott.*) Along the railway, four miles from Prescott Junction, Ont. (*Billings.*) Abundant in marshes along the Bay of Quinte, at Belleville, and all marshes in central Ontario, and westward to Lake Huron, at Red Bay and Owen Sound; also fifteen miles up the Kaministiqua, west of Port Arthur. (*Macoun.*) Vicinity of Hamilton, Ont. (*Logie.*) Marshes along Lake Ontario, at Kingston, Ont. (*Millman.*) Michipicotin River, and Lonely Lake, Ont. (*R. Bell.*) Grassy Narrows, Lake Winnipeg. (*J. M. Macoun.*) Abundant in marshes north-west of Edmonton, and around the west end of Lesser Slave Lake, and north to Lake Athabasca. (*Macoun.*) Marsh at "Chinaman's Ranche" near Câche Creek, B.C. (*Fletcher.*) Saskatchewan River. (*Hooker, Fl.*)

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711. TRIPLASIS, Beauv.

(2828.) **T. purpurea,** Chap.; Vasey, Cat. Grasses U.S. 67, (1885.)
Uralepis purpurea, Nutt.
On the sandy shore of Lake Erie, at Point aux Pins, and Point Pelée. (*Burgess.*)

712. MUNROA, Torr. Bot. Whipple Exp. 102.

(2829.) **M. squarrosa,** Torr.; Vasey, Cat. Grasses U.S. 69, (1885.)
On alluvium in the valley of Red Deer River, five miles east of the Hand Hills, Alberta, 1879. (*Macoun.*)

713. CYNOSURUS, Linn. Gen. 87. (DOG'S-TAIL GRASS.)

(2830.) **C.** CRISTATUS, Linn.; Hook. Student's Flora, 488.
On lawns and in meadows; seldom cultivated. Quebec, near the Parliament buildings. (*St. Cyr.*) Vicinity of Montreal. (*G. Barnston.*) Lawns at Ottawa. (*Fletcher, Fl. Ott.*) Occasionally met with at London, Ont. (*Burgess.*) Near Victoria, Vancouver Island. (*Fletcher.*) Cloverdale, near Victoria. (*John Tolmie.*)

714. KŒLERIA, Pers. Syn. Pl. I., 97.

(2831.) **K. cristata,** Pers.; Hook., Fl. II., 249.
Very abundant in the whole prairie region, and from the confines of the forest to Vancouver Island, and northward to Athabasca Lake. Sandy ground, London, Ont.; and Emerson, Man. (*Burgess. Millman.*) Moose Mountain Creek, Assiniboia. (*J. M. Macoun.*) Brandon, Man. (*Prof. Fowler.*) Cypress Hills, Red Deer Lakes, and throughout the whole Saskatchewan country to Peace River; also from Brandon westward by Calgary through the Rocky Mountains to Castle Mountain. (*Macoun.*) Emerson to the Rocky Mountains, on the 49th parallel; North Fork of Old Man River, Rocky Mountains; also Eliguck Lake, B.C. (*Dawson.*) Abundant in northern British Columbia to lat. 54°;

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common in many localities, Vancouver Island. (*Macoun.*) Mount Finlayson, Vancouver Island. (*Fletcher.*) Lake Winnipeg, and Red River to the Rocky Mountains. (*Hooker, Fl.*) Red River, Man., 1827. (*Douglas.*)

Var. **gracilis,** Gray, Man. Ed. V., 625.

Oak Bay, and Nanaimo, Vancouver Island; rather common. (*Macoun.*)

Var. **major,** Vasey. (MS.) N. Var.

A very fine variety, strikingly like large specimens of *Eatonia obtusata.* Cedar Hill, and Goldstream, Vancouver Island. (*Macoun.*)

715. EATONIA, Rafin. Journ. Phys. LXXXIX.

(2832.) **E. obtusata,** Gray, Man. Ed. V., 626.

Kœleria truncata, Torr., Fl. I., 216.
Aira truncata, Muhl. Gram. 83.
A. obtusata, Michx., Fl. I., 62.
Reboulea gracilis, Kunth; Hook., Fl. II., 249, in part.

Rather rare in Ontario. In tufts in moist open woods, near Belleville; also near Grafton, Northumberland Co.; and at Red Bay, Lake Huron, Ont.; along the South Saskatchewan, at the Elbow, Assiniboia. (*Macoun.*) Red River, Man., 1827. (*Douglas.*)

(2833.) **E. Pennsylvanica,** Gray, Man. Ed. V., 626.

Kœleria (?) *Pennsylvanica,* DC. (1813.)
Aira mollis, Muhl. Gram. 81.
Reboulea gracilis, Kunth; Hook., Fl. II., 249, in part.

Along river margins, chiefly in alluvial soil, from the Atlantic to British Columbia. Restigouche, and Kennebeccasis; rather scarce, N.B. (*Fowler, Cat.*) Charlotte Co., N.B. (*Vroom.*) Titusville, King's Co., N.B. (*Brittain.*) Jupiter River, Anticosti; Ste. Anne des Monts River, Gaspé, Q. (*Macoun.*) Waste places near Prescott, Ont. (*Billings.*) Along the Moira, at Belleville, and in many places throughout central Ontario, extending westward to Owen Sound, and thence northerly to the mouth of Nipigon River, Lake Superior. (*Macoun.*) Low woods near London, Ont. (*Millman.*) North shore of Lake Superior. (*Agassiz.*) Between Fort Severn and York Factory, Hudson Bay; Washow Bay, Lake Winnipeg. (*J. M. Macoun.*) Along the Columbia River, at Donald; apparently rare. (*Macoun.*) Near the Falls of Niagara; Saskatchewan to the Rocky Mountains. (*Hooker, Fl.*) Emerson, Man. (*Prof. Fowler.*)

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716. CATABROSA, Beauv. Agrost. 70.

(2834.) **C. aquatica,** Beauv.; Hook., Fl. II., 249.

Rather rare in springs and small brooks eastward. Pentecost River, Q. (*St. Cyr.*) Boggy place, near Salt Lake, Anticosti; Mont Louis, Gaspé coast, Q. (*Macoun.*) Lake Mistassini, N.E.T.; Fort George, James Bay; Severn River, Keewatin; also west coast of Hudson Bay, and Qu'Appelle River, at Fort Qu'Appelle, Assiniboia. (*J. M. Macoun.*) Swift Current Creek, Assiniboia; Crawling Valley, south of the Hand Hills, Alberta; abundant around a large spring west of Morley Station, Rocky Mountains. (*Macoun.*) Wood Mountain, and Milk River, lat. 49°. (*Burgess. Dawson.*) York Factory, Hudson Bay, to the Rocky Mountains. (*Hooker, Fl.*) Sitka, and Kotzebue Sound. (*Rothr. Alask.*) Greenland. (*Lange.*)

717. ERAGROSTIS, Beauv. Agrost. 70.

(2835.) **E.** MAJOR Host. Gram. 4, t. 24.

E. poæoides, var. *megastachya,* Gray, Man. Ed. V., 631.
Briza Eragrostis, Linn.; Michx., Fl. I., 72; Pursh, Fl. I., 72.
Megastachya Eragrostis, Beauv. Agrost. 74.

Introduced along some of the railways in Ontario. Point Edward, River St. Clair, Ont. (*J. M. Macoun.*) Along the railway at Windsor, Ont. (*Macoun.*)

(2836.) **E.** MINOR, Host.; Vasey, Cat. Grasses U.S. 72, (1885.)

E. poæoides, Beauv.; Gray, Man. Ed. V., 631.
Poa Eragrostis, Linn.; Pursh, Fl. I., 80.

Waste places and in cultivated grounds. London, and Point Pelée, Lake Erie. (*Burgess.*) Vicinity of Hamilton, Ont. (*Logie.*) In fields at Royston, Park, Owen Sound. (*Macoun.*)

(2837.) **E.** PURSHII, Schrad.; Gray, Man. Ed. V., 632.

Apparently introduced along railways. In fields at Port Colborne, and Windsor, Lake Erie. (*Macoun.*)

(2838.) **E. reptans,** Nees; Gray, Man. Ed. V., 631.

Poa reptans, Michx., Fl. I., 69; Pursh, Fl. I., 81; Hook., Fl. II., 245.

Along the Salmon River, four miles above the railway bridge, near

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Shannonville, Hastings Co.; common on alluvial soil, near Belleville, and in many places in Hastings Co., Ont. (*Macoun.*) River flat, Don Valley, Toronto, Ont. (*Burgess.*) Along the Red River, at Winnipeg; common. (*Fletcher.*)

718. MELICA, Linn. Gen. 82.

(2839.) **M. acuminata,** Bolander, Proced. Calif. Acad. IV., 104.

Festuca subulata, Bong. Veg. Sitch. 173; Hook, Fl. II., 251.

Bromus subulatus, Griseb; Gray, Proced. Am. Acad. VIII., 410.

Not uncommon in shady woods at Oak Bay, Gordon Head, and Nanaimo, Goldstream, Qualicum, and Alberni, Vancouver Island. (*Macoun.*) Sitka. (*Rothr. Alask.*) Vicinity of Victoria, Vancouver Island. (*Fletcher.*)

(2840.) **M. aristata,** Thurber; Bolander Proced. Calif. Acad. IV., 103.

Abundant in the valleys of the Selkirk Mountains, especially in Beaver and Bear Creek valleys. (*Macoun.*)

(2841.) **M. bulbosa,** Geyer; Hook. Journ. Bot. VIII., 19.

M. poæoides, Torr. Pacif. R. Rep. IV. 157.

Rather common in the Rocky Mountains, and British Columbia. Western summit of South Kootanie Pass, Rocky Mountains. (*Dawson.*) Not rare in northern British Columbia to Fort McLeod, lat. 55°. (*Macoun.*)

(2842.) **M. Harfordii,** Bolander, Proced. Calif. Acad. IV., 102.

Rather rare in rocky ground at Oak Bay, and in oak woods near Cloverdale, Vancouver Island. (*Macoun.*)

719. PLEUROPOGON, R. Br.

(2843.) **P. Sabinii,** R. Br.; Hook., Fl. II., 249.

Melville Island. (*Hooker, Fl.*) Port Kennedy, west coast of Baffin's Bay, lat. 72°. (*Dr. Walker.*) Greenland. (*Lange.*)

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720. DISTICHLIS, Rafin. (SPIKE-GRASS.)

(2844.) **D. maritima,** Raf. Journ. Phys. LXXXIX., 104.

Brizopyrum spicatum, Hook. & Arn.; Hook., Fl. II., 254, in part; Gray, Man. Ed. V., 628.

B. boreale, Presl, Rel. Hænk. I., 280.

B. Americanum, Link. Hort. Berol. I., 160.

Poa Michauxii, Kunth, Enum. I., 325.

Festuca distichophylla, Michx., Fl. I., 67; Pursh, Fl. I., 84.

Abundant in salt marshes at Victoria, Cadboro Bay, and Nanaimo on the east, and Barclay Sound on the west side of Vancouver Island. (*Macoun.*) Straits of De Fuca, and Nootka. (*Hooker, Fl.*)

Var. **stricta,** Thurber, Bot. Calif. II., 306.

Brizopyrum spicatum, var. *strictum*, Gray.

B. spicatum, Hook. & Arn.; Hook., Fl. II., 254, in part; Macoun, Cat. No. 2175.

Poa boreale, Hook., Fl. II., 245.

We place all our interior specimens under the variety, as they have the loose panicle, few erect spikelets and pale green color that characterize it. Very abundant by salt marshes throughout the whole prairie region, from Winnipeg westward to the mountains, and the dry interior of British Columbia. Hand Hills, and Red Deer Lakes, Alberta. (*Macoun.*) Maple Creek, Alberta. (*J. M. Macoun.*) Thompson River, B. C. (*J. A. Hall.*) "Chinaman's Ranche," above Spence's Bridge, B. C. (*Fletcher.*) Plains of the Red River to the Rocky Mountains. (*Hooker, Fl.*) Milk River, lat. 49°. (*Millman.*) Saline soil, Wood Mountain, Assiniboia. (*Burgess.*) Red River, Man., 1827. (*Douglas.*)

721. DACTYLIS, Linn. Gen. 86. (ORCHARD GRASS.)

(2845.) **D.** GLOMERATA, Linn.; Nees. Gen. t. 65.

Cultivated in orchards and lawns, and escaped to roadsides in many parts of the older provinces. It seems better suited for Vancouver Island than timothy, as it produces better pasture.

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722. BRIZA, Linn. Gen. 84. (QUAKING GRASS.)

(2846.) **B.** MEDIA, Linn.; Gray, Man. Ed. V., 633.

Introduced and naturalized in a few places. Meadow near London, Ont.; very rare. (*Millman.*) On dry rocks at the Halfway House, near Nanaimo, Vancouver Island. (*Macoun.*)

723. POA, Linn. Gen. 83. (MEADOW GRASS.)

(2847.) **P. abbreviata,** R. Br.; Hook., Fl. II., 247.

Melville Islands, and Igloolik; Kotzebue Sound. (*Hooker, Fl.*) Port Bowen, Labrador, 1825. (*Lieut. Ross.*) Digge's Island, Hudson Strait. (*R. Bell.*) On rocks near the sea, Gadboro Bay, and on sand at Qualicum, Vancouver Island. (*Macoun.*) Greenland. (*Lange.*) Some of these references are doubtful.

(2848.) **P. alpina,** Linn.; Hook., Fl. II., 246.

Abundant on mountains and on the northern coast. Nain, coast of Labrador; and Cape Chudleigh, Hudson Strait. (*R. Bell.*) Newfoundland. (*Sir Joseph Banks.*) Jupiter River, and Gunn River, Anticosti; Rivière Ste. Anne des Monts, Gaspé, Q. (*Macoun.*) Mount Albert, Gaspé, Q. (*Porter.*) Harbor Island, Mingan, Q. (*St. Cyr.*) North shore of Lake Superior. (*Agassiz.*) At Otter Head, and Pie Island, Lake Superior; Point Wilkins, Lake Winnipegoosis, Man. (*Macoun.*) "The Twins," James Bay; west coast of Hudson Bay. (*J. M. Macoun.*) York Factory to Fort Churchill. (*R. Bell.*) Between Repulse Bay and Cape Lady Pelly. (*Dr. Rae.*) Rather abundant on the Rocky Mountains, from the Kananaskis westward to Roger's Pass, in the Selkirk Mountains; Stewart's Lake Mountain, and Fort McLeod, B.C.; summit of Mounts Benson and Arrowsmith, Vancouver Island. (*Macoun.*) Eastern and western summits of North Kootanie Pass, Rocky Mountains; Lake Lindeman, lat. 59° 40′, B.C., and Pelly Banks, lat. 62°, N.W.T. (*Dawson.*) From the elevated grounds of the Saskatchewan to the Rocky Mountains, and Bear Lake. (*Hooker, Fl.*) Pond's Bay, Baffin's Bay. (*Dr. Walker.*) Greenland. (*Lange.*)

(2849.) **D. alsodes,** Gray, Man. Ed. V., 630.
P. nemoralis, Torr., Fl. I., 111.
Dartmouth, near Halifax, N.S. (*Sommers, Cat.*) Between Florence-

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ville, and Andover, N.B. (*Brittain.*) St. Stephen, N.B. (*Vroom.*) Damp woods, near London, Ont. (*Burgess. Millman.*)

(2850.) **P. andina,** Nutt.; Vasey, Cat. Grasses U. S., 79, (1885.)

This species seems to be badly characterized or poorly understood. Ungava, Labrador. (*Barnston.*) Sand beaches, Poplar River, Lake Nipigon, Ont. (*Macoun.*)

Var. **purpurea,** Vasey. (MS.)

Red Deer Lakes, Hand Hills, and Red Deer River, Alberta. (*Macoun.*)

(2851.) **P.** ANNUA, Linn.; Hook., Fl. II., 245.

This species has become naturalized wherever settlements have been made, and it seems to thrive as well on the shores of Hudson Bay as under the genial skies of Vancouver Island. Greenland. (*Lange,*)

(2852.) **P. Bolanderi,** Vasey, Coult. Bot. Gaz. VII., 32.

On sand at Sooke, Vancouver Island. (*Fletcher.*)

(2853.) **P. cæsia,** Smith; Gray, Man. Ed. V., 629.

P. nemoralis, Hook., Fl. II., 246.
P. glauca, Vahl., Fl. Dan. t. 964, (1790.)

An abundant and useful grass forming much of the pasture in the eastern and northern parts of the prairie region. At Windsor, N.S. (*Macoun.*) Taborville, King's Co., N.B. (*Fowler, Cat.*) Summit of Mount Albert, Gaspé, Q. (*Porter.*) Very common at Belleville, along the River Moira, Ont.; north-east coast of Lake Superior, and around Thunder Bay, and up the Kaministiqua to Kakabeka Falls. (*Macoun.*) Gravelly shores, London, and Parry Sound, Georgian Bay. (*Burgess.*) Vicinity of Hamilton, Ont. (*Logie.*) Severn River, and west coast of Hudson Bay. (*J. M. Macoun.*) Point Wilkins, Lake Winnipegoosis, Man.; west of Touchwood Hills; Brandon, and Old Wives Lakes; south of Battleford. (*Macoun.*) Moose Mountain Creek, Assiniboia. (*J. M. Macoun.*) North Fork of Old Man River, Rocky Mountains; Lake Lindeman, lat. 59° 40′; Dease River, lat. 59°; Frances River, lat. 61°; Pelly Banks, lat. 62°, B.C., and N.W.T. (*Dawson.*) Spence's Bridge, B.C. (*Macoun.*)

Var. **strictior,** Gray, Man. Ed. V., 629.

Damp rocks near Sault Ste. Marie; Flat Rock Portage, Nipigon House, Lake Nipigon; on dry slopes of the foot-hills of the Rocky Mountains, at Morley. (*Macoun.*) Wet gravelly shore of Lake Superior, at Port Arthur. (*Burgess.*)

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(2854.) **P. cenisia,** All.; Vasey, Cat. Grasses U. S., 81, (1885.)

P. arctica, R. Br.; Hook., Fl. II., 246, in part; Macoun, Cat. No. 2191.
P flexuosa, Wahl. Fl. Suec. (1824.)

Labrador; Rocky Mountains to the Arctic sea-shore and islands in every direction. (*Hooker, Fl.*) Ford's Harbor, Labrador; Cape Chudleigh, Nottingham Island, Digge's Island, and Mansfield Island, Hudson Strait. (*R. Bell.*) Fort George, Little Charlton Island, and "The Twins," James Bay; west coast of Hudson Bay. (*J. M. Macoun.*) Between Fort Churchill and Cape Lady Pelly, north of Hudson Bay. (*Dr. Rae.*) Point Barrow, Alaska. (*John Murdoch.*) Cape Lisburne, Kotzebue Sound, Ounalashka, and Sitka. (*Rothr. Alask.*) On the beds of snow-slides on all the higher Rocky and Selkirk mountains. (*Macoun.*) Hills north of Finlayson Lake, N.W.T. (*Dawson.*) Greenland. (*Lange.*)

(2855.) **P.** COMPRESSA, Linn. (English Blue Grass.)

This is considered an excellent pasture grass, but is much inferior to *Poa pratensis.* Truro, Annapolis and Kingston, N. S. (*Macoun.*) Harvey, York Co.; Fredericton Junction, and St. John; Bellisle, N.B. (*Fowler, Cat.*) Magdalen Islands, N.S. (*J. Richardson.*) St. Charles River, Q. (*St. Cyr.*) Field, Ste. Anne des Monts River, Gaspé, Q. (*Macoun.*) Vicinity of Tadousac, Q. (*A. T. Drummond.*) Neighborhood of Ottawa. (*Fletcher, Fl. Ott.*) Common at Prescott, Ont. (*Billings.*) Very common throughout central Ontario, in old pastures, and westward to Owen Sound. (*Macoun.*) Vicinity of Hamilton, Ont. (*Logie.*) Sterile sandy soil, London, Ont.; also Parry Sound, Georgian Bay. (*Burgess.*) In pastures at Cedar Hill, and Cloverdale, Vancouver Island. (*Macoun.*)

(2856.) **P. Californica,** Vasey, Cat. Grasses U. S. 81, (1885.)

P. andina, Nutt. in herb. Gray; Macoun, Cat. No. 2185.
Eragrostis Fendleri, Steud. Syn. Gram. 278.
Atropis Californica, Munro. (MS.)

Abundant on the mountain slopes along the Fraser River, at Lytton, and up the Thompson to Spence's Bridge, B.C. (*Macoun.*)

(2857.) **P. cuspidata,** Vasey & Scribner.

Rather common on the higher slopes of the Rocky and Selkirk mountains, and frequent in all the valleys. (*Macoun.*)

(2858.) **P. debilis,** Torr. Bot. N. York, II., 459.

Not uncommon in woods eastward. Rocky woods at Pirate's Cove, Canso, N.S. (*Macoun & Burgess.*) Petitcodiac, N.B. (*Fowler, Cat.*)

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Island of Orleans. (*St. Cyr.*) Along Ste. Anne des Monts River, Gaspé, Q. (*Macoun.*) Mount Albert, Gaspé, Q. (*Porter.*) Miriwin's Woods, Prescott, Ont.; rare. (*Billings.*) Dry rocky ground in woods at Shannonville, and Belleville, Hastings Co., Ont.; dry spots, Current River, Lake Superior, and Lake Nipigon; Niagara Falls, and Port Stanley, Ont. (*Macoun.*) London, Ont. (*Millman*) Vicinity of Hamilton, Ont. (*Logie.*) Kemptville, Ont. (*Porter.*)

Var. **acutiflora,** Vasey. (MS.)

Common in woods and thickets at Truro, N.S. (*Macoun & Burgess.*)

(2859.) **P. Eatoni,** Watson.

East end of Cypress Hills, Alberta, 1880. (*Macoun.*)

(2860.) **P. flavicans,** Ledeb.; Rothr. Alask. Pl., 467.

Ounalashka. (*Rothr. Alask.*)

(2861.) **P. glumaris,** Trin.; Hook., Fl. II., 247.

Glyceria glumaris, Ledeb.; Rothr. Alask. Pl. 458.

Islands of St. Lawrence, and Sitka, peninsula of Alaska, and Kotzebue Sound. (*Hooker, Fl. Rothr. Alask.*) Mingan Islands, Q. (*St. Cyr.*) Magdalen Islands, N.S. (*McKay.*) English Bay, Anticosti; Grand Etang, Gaspé coast, Q. (*Macoun.*) Temiscouata, Q. (*Pringle.*)

(2862.) **P. Howellii,** Vasey & Scribner.

On the slopes of dry gravelly hillsides at Goldstream, Nanaimo, and Somenos, Vancouver Island. (*Macoun.*)

(2863.) **P. laxa,** Hænk.; Hook., Fl. II., 246.

On the open prairie, Emerson, Man. (*Burgess. Millman.*) Near Edmonton, on the Saskatchewan; on a mountain summit near Kicking Horse Lake, Rocky Mountains. (*Macoun.*) Hudson Bay to the Arctic islands. (*Hooker, Fl.*) Pond's Bay and Port Kennedy, west coast of Baffin's Bay, lat. 72°. (*Dr. Walker.*) Nelson River, Keewatin. (*R. Bell.*)

(2864.) **P. leptocoma,** Trin.; Hook., Fl. II., 247.

Sitka. (*Hooker, Fl.*)

(2865.) **P. Macounii,** Vasey. (ined.)

Abundant on the upper slopes of the Rocky Mountains, at Kicking Horse Lake, (1885.) (*Macoun.*)

(2866.) **P. nemoralis,** Linn.; Hook., Fl. II., 246; Pursh, Fl. I., 79. (?)

Amongst gravel in the valley of Jupiter River, Anticosti; Moose

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Mountain, Assiniboia; on the lower slopes in openings of the pine woods in the Rocky Mountains, at Castle Mountain; on sand in the valley of Beaver Creek, Selkirk Mountains, B.C. (*Macoun.*) Kotzebue Sound. (*Rothr. Alask.*) Moose Factory, James Bay. (*Cottar & Dr. Hayden.*) Greenland. (*Lange.*)

(2867.) **P. Nutkaensis,** Presl.

Alaska. (*Vasey.*)

(2868.) **P. Nevadensis,** Vasey.

On cliffs along the sea at Esquimalt, and Gordon Head, near Victoria, Vancouver Island. (*Macoun.*)

(2869.) **P. pratensis,** Linn.; Hook., Fl. II., 246.

This species is one of the most widely spread and most valuable grasses we have in the country. It is found in almost every situation, but prefers sandy or gravelly fields, where in a few years it takes complete possession. Its value for hay is not nearly so great as for pasture. Although often despised by the farmer it is the best friend he has, as his animals feed upon it for nearly the whole summer. The form generally found in the fields has been introduced, but it is indigenous both in the north and west, and is destined to be the great pasture grass of our North-west Territories. Greenland. (*Lange.*)

(2870.) **P. purpurascens,** Vasey, Bull. Torr. Bot. Club. VI., 297.

On the upper slopes of the Rocky and Selkirk mountains; very abundant; summit of Mount Arrowsmith, Vancouver Island, alt. 5,700 feet. (*Macoun.*)

(2871.) **P. serotina,** Ehrh.; Gray, Man. Ed. V., 629.

P. palustris, Muhl. Gram. 150.

P. crocata, Michx., Fl. I., 68; Hook., Fl. II., 246.

Abundant in wet swampy places from the Atlantic to the Pacific. Truro, and Yarmouth, N.S. (*Macoun.*) Baddeck, Cape Breton. (*Burgess.*) Magdalen Islands, N.S. (*McKay.*) Along brooks in damp fields, Bass River; Hampton, N.B. (*Fowler, Cat.*) Beauport, Q. (*St. Cyr.*) Open places, Huckleberry Rapids, Argenteuil Co., Q. (*D'Urban.*) Tadousac, Q. (*A. T. Drummond.*) Along the Gaspé coast, at Matane; Salt Lake, Anticosti. (*Macoun.*) Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Common in wet places at Prescott, Ont. (*Billings.*) Very common throughout central Ontario, and extending northerly around Lakes Huron and Superior to Rainy Lake. (*Macoun.*) North shore of Lake Superior. (*Agassiz.*) Swampy ground near London. (*Millman.*

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Burgess.) Vicinity of Hamilton, Ont. (*Logie.*) Gravelly shore of Lake Superior, at Port Arthur, Ont. (*Burgess.*) Nelson River, Keewatin. (*R. Bell.*) Moose Mountain, Assiniboia. (*J. M. Macoun.*) Sand Creek, Kootanie Valley, Rocky Mountains. (*Dawson.*) Côteau de Missouri; abundant on the Saskatchewan, and northward to Lake Athabasca; very common in wet places and ditches, Vancouver Island. (*Macoun.*) Lake Winnipeg to the Rocky Mountains. (*Hooker, Fl.*) Red River, Man., 1827. (*Douglas.*)

We have vars. *Hallii* and *erecta* from the prairie region, but they may be only transient forms of the species, and not good varieties.

(2872.) **P. stenantha,** Trin.; Hook., Fl. II., 247.

Festuca nervosa, Hook., Fl. II., 251. (?)

Sitka, and Ounalashka. (*Rothr. Alask.*) Nootka Sound, west coast of Vancouver Island. (*Hooker, Fl.*) On the beds of snow slides on the higher Selkirk Mountains in Roger's Pass, B.C. (*Macoun.*)

(2873.) **P. sub-aristata,** Scribner.

On the summits of the higher Rocky Mountains, from Canmore westward to the Columbia. (*Macoun.*)

(2874.) **P. tenuiflora,** Nutt.; Gray, Proced. Am. Acad. VIII., 409

Atropis tenuiflora, Thurber, Bot. Calif. II., 310.

An exceedingly valuable grass, especially in the foot-hills of the Rocky Mountains and throughout British Columbia. One of the "Bunch Grasses." In its numerous unrecognized varieties it extends from Brandon westward through the whole prairie region, especially to the south, and appears again west of the Rocky Mountains, where it is the chief pasture grass, and forms part of the natural hay in northern British Columbia. On Vancouver Island it is abundant, from the sea-coast to the snow-line, and hence is essentially the native pasturage grass of the Pacific coast.

Var. **Oregona,** Vasey, Cat. Grasses U.S. 85, (1885.)

This variety has only been detected along the coast of Vancouver Island, from Victoria, to Nanaimo.

(2875.) **P.** TRIVIALIS, Linn. (Rough-Stalked Meadow Grass.)

Introduced in ballast at Richibucto, N.B. (*Fowler, Cat.*) A number of forms of this fine grass were abundant in the wet pastures at, and around, Victoria, Vancouver Island; doubtless introduced. (*Macoun.*)

We have still a number of undetermined forms of *Poa,* some of

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which may be good species, but we have not material enough on hand to come to any decision. This genus is well represented in Canada, and the fact that such species as *P. cæsia*, *pratensis*, *serotina*, and *tenuiflora*, are found throughout the north, shows clearly that Canada wherever denuded of forest is the land of butter, cheese and beef, for future generations.

724. GRAPHEPHORUM, Desv. (1810.)

(2876.) **G. melicoides,** Beauv.; Gray, Man. Ed. V., 625.

Dupontia Cooleyi, Gray, Man. Ed. II., (1856.)

Petitcodiac, and Titusville, N.B. (*Fowler, Cat.*) Simonds, Carleton Co., N.B. (*Brittain.*) Mount Albert, Gaspe, Q. (*Porter.*) Abundant along the coast of Anticosti, at Rivière de Brig; five miles up the Madeline River, Gaspé coast, Q; on the bank of the Trent, half-way between Meyersburg and Campbellford, Northumberland Co., Ont.; shore of Red Bay, Lake Huron; very abundant at the Pic River, Lake Superior. (*Macoun.*)

(2877.) **G. Wolfii,** Vasey, Cat. Grasses U. S. 55, (1885.)

"Head of the Mountain," west end of Cypress Hills, Alberta. (*Macoun.*)

725. DUPONTIA, R. Br.

(2878.) **D. Fischeri,** R. Br.; Hook., Fl. II., 242.

Arctic sea-coast and islands. (*Hooker, Fl.*) Cape Prince of Wales, and Nottingham Island, Hudson Strait. (*R. Bell.*) Port Kennedy, west coast of Baffin's Bay. (*Dr. Walker.*) Point Barrow. (*John Murdoch.*) Between Repulse Bay and Cape Lady Pelly. (*Dr. Rae.*)

(2879.) **D. psilosantha,** Rupt.; Symb. Pl. Ross. 64.

Kotzebue Sound. (*Rothr. Alask.*) Arctic coast to Hudson Bay. (*Vasey.*) Greenland. (*Lange.*)

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726. ARCTOPHILA, Rupt.

(2880.) **A. fulva,** Rupt.; Vasey, Cat. Grasses U.S. 88, (1885.)

Colpodium fulvum, Ledeb. Rothrock Pl. Alask., 458.
Poa fulva, Trin.; Hook., Fl. II., 247.

Kotzebue Sound. (*Rothr. Alask.*) Arctic coast. (*Vasey.*) Point Barrow. (*John Murdoch.*)

(2881.) **A. Læstadii,** Rupt.; Vasey, Cat. Grasses U.S. 88, (1885.)

A. pendulina, And.

Nottingham and Mansfield islands, Hudson Straits; coast of Hudson Bay. (*R. Bell.*) West coast of Hudson Bay, lat. 56°. (*J. M. Macoun.*)

(2882.) **A. mucronata,** Hack.; Vasey, Cat. Grasses U.S. 88, (1885.)

Arctic coast. (*Vasey.*)

727. FLUMINIA, Fries.

(2883.) **F. arundinacea,** Fries.; Vasey, Cat. Grasses U.S. 88, (1885.)

Festuca borealis, Hook., Fl. II., 251.
Graphephorum festucaceum, Gray.

This fine grass is found in great abundance in nearly all fresh water ponds throughout the prairie region, and northward to Peace River. (*Macoun.*) Ponds, Souris Plain, Man. (*J. M. Macoun.*) Lake of the Woods. (*Burgess.*)

728. GLYCERIA, R. Br.

(2884.) **G. angustata,** Fries. Mant. III., 176.

Poa angustata, R. Br.; Hook., Fl. II., 247.
Atropis angustata, Ledeb. Fl. Ross. IV., 390.

Kotzebue Sound. (*Rothr. Alask.*) Arctic sea-coast and adjacent islands. (*Hooker, Fl.*) Digge's Island, Hudson Strait. (*R. Bell.*) Salt marshes along the Gaspé coast, at Mont Louis; and in marshes at Annapolis, N. S. (*Macoun.*) Idaho Inlet, Cross Sound, Alaska. (*Meehan.*) Greenland. (*Lange.*)

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(2884.) **C. arctica,** Hook., Fl. II., 248.

G. arctica, β. laxa, Dur. Pl. Kan., No. 97.

Arctic sea-coast. (*Hooker, Fl.*) This species is figured in Hooker's Flora Boreali Americana, and resembles a form of *G. maritima,* but we are unaware of its identification with any of our species.

(2886.) **C. arundinacea,** Kunth; Vasey, Cat. Grasses, U.S. 86, (1885.)

G. aquatica, Smith; Hook., Fl. II., 248; Macoun, Cat. No. 2167.
Poa aquatica, var. *β. Americana,* Torr., Fl. I., 108.

Abundant in pools, ditches, and borders of lakes and rivers, from the Atlantic to the Pacific. In water and very wet places, Bass River, N.B. (*Fowler, Cat.*) Campbellton, N.B. (*Chalmers.*) Magdalen Islands, (*J. Richardson.*) Whycocogmah, Cape Breton. (*Macoun.*) Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Very common near Prescott, Ont. (*Billings.*) Abundant at Belleville, and westward throughout Ontario to Lake Nipigon, and south to the Kaministiqua River. (*Macoun.*) Sault Ste. Marie. (*R. Bell.*) North shore of Lake Superior. (*Agassiz.*) Vicinity of Hamilton, Ont. (*Logie.*) London, Ont.; Parry Sound, Georgian Bay; Emerson, Man. (*Burgess.*) Woodstock, Ont. (*Millman.*) High Bluff, Man. (*McGill Coll. Herb.*) Moose Factory, James Bay. (*Cottar & Dr. Hayden.*) All around James Bay, and north to York Factory; also at Maple Creek, Alberta. (*J. M. Macoun.*) Abundant in pools throughout the prairie region, and north to Lake Athabasca; rather common in the Columbia Valley, from Golden City to Donald; in wet marshy places at Victoria, Nanaimo, and Alberni, Vancouver Island. (*Macoun.*) Upper Nachacco River, B.C. (*Dawson.*) Sitka. (*Rothr. Alask.*) Lake Winnipeg to the Saskatchewan; Rocky Mountains. (*Hooker, Fl.*)

(2887.) **C. Canadensis,** Trin.; Hook., Fl. II., 249.

Poa Canadensis, Beauv.; Torr., Fl. I., 112.
Briza Canadensis, Michx., Fl. I., 71; Pursh, Fl. I., 82.
Poa aquatica, Pursh, Fl. I., 80.

Quite common in the maritime provinces; rare westward. Yarmouth, Windsor and Canso, N. S.; North Sydney, Cape Breton. (*Macoun & Burgess.*) Prince's Lodge, near Halifax, N.S. (*Sommers, Cat.*) Pictou, N.S. (*McKay.*) Common in bogs and very wet places, N.B. (*Fowler, Cat.*) Tobique River, N.B. (*Hay.*) Thunder River, Q. (*St. Cyr.*) Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Wet grounds near Prescott Junction, Ont.; and Chelsea, Q. (*Billings.*) Beaver meadow, Partridge Lake, Addington Co.; also at the entrance to the Murray Canal, near Trenton; abundant up Gull River, Victoria Co.;

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and in a marshy meadow, Point aux Pins, Lake Superior; Flat Rock Portage, Lake Nipigon. (*Macoun.*) Lake Mistassini, N.E.T. (*J. M. Macoun.*) Vicinity of Hamilton, Ont. (*Logie.*) Parry Sound, Georgian Bay. (*Burgess.*)

(2888.) **C.** DISTANS, Wahl.; Gray, Man. Ed. V., 628.

Atropis distans, Griseb.; Ledeb. Fl. Ross. IV., 388.

A careful examination of all our specimens from both the east or Atlantic coast and the west coast, has satisfied us that this species is not indigenous to Canada. All forms not introduced are placed under the var. *airoides* or *G. maritima*. On ballast heaps, Pictou, N. S.; North Sydney, Cape Breton. (*Macoun & Burgess.*) Carleton, St. John, N.B., 1877. (*Fowler.*)

Var. **airoides,** Vasey, Cat Grasses U. S. 87, (1885.)

Glyceria airoides, Thurber, Bot. Wilkes Exp. 490.
Poa airoides, Nutt.; Hook., Fl. II., 245.
P. fasciculata, Hook., Fl. II., 245.

Very abundant in saline marshes throughout the interior west of Winnipeg, at Moose Mountain, Côteau de Missouri, Red Deer Lakes, and Edmonton; Castle Mountain, in Rocky Mountains. Seed evidently brought from the prairie. (*Macoun.*) Fort Carleton. (*Hooker, Fl.*)

(2889.) **C. elongata,** Trin.; Hook., Fl. II., 248.

Poa elongata, Torr., Fl. I., 112.

Bass River, and Salmon River, N.B. (*Fowler, Cat.*) Lower Tobique River, N.B. (*Hay.*) St. David, Charlotte Co., N.B. (*Vroom.*) Titusville, King's Co., N.B. (*Brittain.*) Pentecost River, Q. (*St. Cyr.*)

(2890.) **C. fluitans,** R. Br.; Hook., Fl. II., 248.

Festuca fluitans, Linn.; Michx., Fl. I., 66; Pursh, Fl. I., 84.

Very common in ditches and muddy places from the Atlantic to the Pacific. In shallow water, Bass River; and at St. John, N.B. (*Fowler, Cat.*) Common around Ottawa. (*Fletcher, Fl. Ott.*) Abundant at Prescott Junction, Ont. (*Billings.*) Very common in ditches and ponds througout central and western Ontario, and extending to Lake Nipigon and the west side of Thunder Bay, and Kaministiqua River. (*Macoun.*) North shore of Lake Superior. (*Agassiz.*) Vicinity of Hamilton. (*Logie.*) London, Toronto, Niagara Falls, Hatchley, and Point aux Pins, Lake Erie. (*Burgess.*) Port Colborne, Lake Erie. (*McGill Coll. Herb.*) Michipicotin River, Ont.; and Nelson River, Keewatin. (*R. Bell.*) Throughout the northern part of the prairie region, and south to the dry, treeless district; rather common in the

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Columbia valley and eastern valleys of the Rocky Mountains; in wet places at Goldstream, Somenos, Nanaimo, and Alberni, Vancouver Island. (*Macoun.*) Vicinity of Victoria, Vancouver Island. (*Fletcher.*) Saskatchewan. (*Hooker, Fl.*)

(2891.) **G. festucæformis,** Reichenb. Icon. Fl. Germ. t., 151.
Poa festucæformis, Host.; Hook., Fl. II., 245.

Along the coast of Vancouver Island, at Oak Bay, near Victoria, 1887. (*Macoun.*) Sitka. (*Hooker, Fl.*)

(2892.) **G. Lemmoni,** Vasey.

Along the coast of Vancouver Island, at Esquimault, Oak Bay, and Nanaimo. (*Macoun.*)

(2893.) **G. maritima,** Wahl.; Gray, Man. Ed. V., 628.
Atropis distans, Thurber, Bot. Calif. II., 308, in part.

All the native forms distinct from *G. angustata,* are placed here whether collected on the east, north or west coasts. The various forms of this species require careful examination. North Sydney, Cape Breton, and Truro, N.S. (*Macoun.*) Frequent on the sea-coast of Kent Co.; Salt marshes, Bathurst, and St. John, N.B. (*Fowler, Cat.*) Coast of Anticosti, at Salt Lake, Ellis Bay, and Strawberry Cove; salt marsh at Cape Rosier, and along the Gaspè coast to Matane. (*Macoun.*) Ste. Geneviève, Mingan, Q. (*St. Cyr.*) Salt marshes, Lower St. Lawrence. (*Pringle.*) Fort George, James Bay. (*J. M. Macoun.*) Common in salt marshes along the coast of Vancouver Island, at Victoria, Nanaimo, and Alberni. (*Macoun.*) Texada Island, and Blunden Harbor, Gulf of Georgia, B.C. (*Dawson.*) Sitka. (*Rothr. Alask.*) Fort Wrangel, Alaska. (*Meehan.*)

(2894.) **G. nervata,** Trin.; Hook., Fl. II., 248.
G. Michauxii, Kunth, Enum. I., 367.
Poa nervata, Willd.; Pursh, Fl. I., 78.
P. striata, Michx., Fl. I., 69.
P. parviflora, Pursh, Fl. I., 80.
Briza Canadensis, Nutt., Gen. I., 69.

A very common and variable species growing chiefly in wet meadows and marshy places in woods, from the Atlantic to the Pacific. Bedford, Yarmouth, and many other places in Nova Scotia. (*Macoun.*) In damp grounds and meadows, Bass River, and St. John, N. B. (*Fowler, Cat.*) Tobique River, N.B. (*Hay.*) L'Anse à Griffon, Gaspé coast. (*J. Bell.*) Jupiter River, Anticosti, and at Point Lèvis, Q. (*Macoun.*) Thunder River, and Island of Orleans, Q. (*St. Cyr.*) Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Common around Prescott, Ont. (*Billings.*) Very abundant throughout Ontario, and westward

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to the Lake of the Woods. (*Macoun.*) North shore of Lake Superior. (*Agassiz.*) Vicinity of Hamilton, Ont. (*Logie.*) London, Kingston, Parry Sound, and Sault St. Marie, Ont. (*Burgess.*) Oxford House, Keewatin. (*R. Bell.*) Lake Mistassini, N.E.T.; Souris Plain, and Medicine Hat, N.W.T. (*J. M. Macoun.*) Common in wet places on the prairie, and north-westward to Peace River, and Lake Athabasca; abundant in the Rocky and Selkirk mountains; throughout British Columbia to lat. 56°; common on Vancouver Island. (*Macoun.*)

(2895.) **C. obtusa,** Trin.; Hook. Fl. II., 249.

Poa obtusa, Muhl.; Torr., Fl. I., 112.

St. Stephen, N.B. (*Vroom.*) Apparently very rare in Canada.

(2896.) **C. pallida,** Trin.; Gray, Man. Ed. V., 627.

In and around springs; rather local. At North Sydney, Cape Breton, (*Macoun & Burgess.*) In water Petitcodiac, N.B. (*Fowler, Cat.*) Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) At O'Brien's Bridge, and Canniffton, Hastings Co.; one mile south of Gibson's Mountain, Prince Edward Co.; at Cold Creek Bridge, Wooler, Northumberland Co.; and boggy ground, Sydenham Falls, Owen Sound. (*Macoun.*) Wet sandy shore, Port Cockburn, Muskoka, Ont. (*Burgess.*) Vicinity of Hamilton, Ont. (*Logie.*

(2897.) **C. pauciflora,** Presl; Hook, Fl. II., 248.

Not uncommon in marshes around Lesser Slave Lake, and westward to Peace River, at Hudson's Hope; in the vicinity of springs and along brooks in swamps in the valleys of the Selkirks; rather common on Vancouver Island, at Somenos, Nanaimo, and Stamp River, on the west coast. (*Macoun.*) Vicinity of Victoria, Vancouver Island. (*Fletcher.*) Sitka, Alaska. (*Meehan.*) Nootka Sound. (*Hooker, Fl.*) Vancouver city, Burrard Inlet, B.C. (*Prof. Fowler.*)

(2898.) **C. pumila,** Vasey, Bull. Torr. Bot. Club XV., 48.

A very small but distinct (new) species, gathered in salt marshes along Barclay Sound, west coast of Vancouver Island, 1887. (*Macoun.*)

729. FESTUCA, Linn. (FESCUE-GRASS.)

(2899.) **F. duriuscula,** Linn.; Pursh, Fl. I., 83.

F. ovina, Linn., var. *duriuscula,* Gray, Man. Ed. V., 633.

We place under this species all coast forms *without* running root-

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stocks, and with *F. rubra* all those which have. Rather common on the Atlantic coast, and apparently indigenous. Newfoundland. (*Sir Joseph Banks.*) At Bedford, Annapolis, and McNab's Island, Halifax Harbor. (*Macoun.*) Magdalen Islands, N.S. (*McKay. J. Richardson.*) Pennant, Halifax Co., N. S. (*Sommers, Cat.*) Coast of Labrador. (*McGill Coll. Herb.*) Richibucto, Shediac, and Moncton, N.B.; scarce. (*Fowler, Cat.*) Ellis Bay, Anticosti. (*St. Cyr.*) Gaspé Basin, Gaspé Co., Q.; Wellington Beach, Lake Ontario; dry fields, near Trenton, and Port Hope, Ont.; very abundant at Queenston Heights; and in many places around Lake Superior. (*Macoun.*) West coast of Hudson Bay. (*J. M. Macoun.*) Not uncommon on gravelly slopes in the Rocky and Selkirk mountains. (*Macoun.*)

(2900.) **F.** ELATIOR, Linn.; Pursh, Fl. I., 83.

Cultivated on lawns and in some meadows. Meadows at Windsor, and in fields at Halifax, N.S. (*Macoun.*) In fields at Fredericton, N.B. (*Fowler, Cat.*) Beauport, Q. (*St. Cyr.*) In meadows at London, Ont. (*Burgess.*) Vicinity of Hamilton, Ont. (*Logie.*) Moose Factory, James Bay. (*Cottar & Dr. Hayden.*)

(2901.) **F. microstachya,** Nutt.; Watson, Bot. King Exp. V., 388.

Very common on dry gravelly slopes throughout southern Vancouver Island, on all the dry slopes at Nanaimo, Goldstream, and Alberni. (*Macoun.*) Cadboro Bay, near Victoria, Vancouver Island. (*Fletcher.*) Sooke, south-west of Vancouver Island. (*Dawson.*)

Var. **divergens,** Thurb.; Vasey, Cat. Grasses U. S. 90, (1885.)

Very abundant on gravelly slopes on the mountains around Goldstream, and an dry rocks near Wellington Mine, Departure Bay, Vancouver Island. (*Macoun.*)

Var. **pauciflora,** Scribner; Vasey, Cat. Grasses U. S. 90, (1885.)

Found in some abundance at Stewart's Lake, northern British Columbia. (*Macoun*)

(2902.) **F.** MYURUS, Linn.; Michx., Fl. I., 66; Pursh, Fl. I., 83; Hook., Fl. II., 249.

Introduced on all dry soils in the southern part of Vancouver Island, chiefly under oaks. Abundant at Cedar Hill, and Nanaimo. (*Macoun.*) Cadboro Bay, near Victoria, Vancouver Island. (*Fletcher.*)

(2903.) **F. nutans,** Willd.; Pursh, Fl. I., 84.

Halifax, N.S. (*Burgess.*) Lower Norton, Belleisle, and Bairdsville, N.B.

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(*Brittain.*) Miriwin's Woods, near Prescott, Ont.; rather rare. (*Billings.*) Common in rich, rocky woods and thickets near Belleville; also Seymour, Northumberland Co.; and at Owen Sound, Ont. (*Macoun.*) Vicinity of Hamilton, Ont. (*Logie. Millman.*) Rich woods at London, Ont. (*Burgess*)

(2904.) **F. occidentalis,** Hook., Fl. II., 249.

F. pauciflora, Thurb. Bot. Calif. II., 318.

Goldstream, and on the slopes of Mount Finlayson, and Mount Prevost, Vancouver Island. (*Macoun.*)

(2905.) **F. ovina,** Linn.; Hook., Fl. II., 250.

Under various forms this species extends from the Atlantic to the Pacific. Bedford, near Halifax, N.S. Introduced. (*Sommers, Cat.*) In tufts on hillsides, Truro, N.S. (*Macoun.*) Petty Harbor, Newfoundland. (*R. Bell.*) Plains of Abraham, Q. (*St. Cyr.*) Vicinity of Hamilton, Ont. (*Logie.*) Sandy meadows, London, Ont. Port Stanley, Lake Erie; north shore of Lake Superior, and along Lake Nipigon to Livingstone Point. (*Macoun.*) Emerson, Man. (*Burgess.*) Nelson River, Keewatin. (*R. Bell.*) Frequent on bluffs along the Assiniboine, between Brandon and Fort Ellice; rather common on the lower slopes of the Rocky Mountains; abundant in northern British Columbia, and through the Peace River Pass, and northward to Lake Athabasca; rather common on Vancouver Island. (*Macoun.*) North Point of Texada Island, Gulf of Georgia; Sooke, Vancouver Island; Lake Lindeman, lat. 59° 40′; Pelly Banks, and Pelly River, lat. 62°, N.W.T.; Queen Charlotte Islands. (*Dawson.*) Vicinity of Victoria, Vancouver Island. (*Fletcher.*) Kotzebue Sound. (*Rothr. Alask.*) Red River, Man., 1827. (*Douglas.*) Lake Winnipeg to the Saskatchewan, and Bear Lake; and Rocky Mountains. (*Hooker, Fl.*) Cumberland Islands, Arctic coast. (*Parry.*)

Var. **brevifolia,** Watson, Bot. King's Exp. V., 379.

F. brevifolia, R. Br.; Hook., Fl. II., 350.

Abundant along the Arctic coast, and on mountain tops. Ford's Harbor, Labrador; Upper Savage Islands, Nottingham, Mansfield, and Digge's islands, Hudson Strait. (*R. Bell.*) Fort George, James Bay. (*J. M. Macoun.*) Cumberland Island, Hudson Bay. (*Parry.*) Between Fort Churchill, and Repulse Bay. (*Dr. Rae.*) Pond's Bay, and Port Kennedy, Baffin's Bay. (*Dr. Walker.*) On the higher slopes of the Rocky Mountains, from Canmore westward through the Selkirk Mountains to Roger's Pass; summit of Mount Arrowsmith, alt. 5,700

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feet, Vancouver Island. (*Macoun.*) On the Arctic sea-coast and islands; and Rocky Mountains. (*Hooker, Fl.*) Rae River, Arctic coast. (*Dr. Rae.*)

Var. **polyphylla,** Vasey, Cat. Grasses U. S. 90, (1885.)

A fine tall grass growing on hillsides at Goldstream and Nanaimo, Vancouver Island. (*Macoun.*)

Var. **vivipara,** Gray, Man. Ed. V., 633.

Common along the coast of Anticosti, at Jupiter, River. (*Macoun.*) Severn River, Keewatin. (*J. M. Macoun.*) Cumberland House, Bear Lake, and Arctic sea-coast. (*Hooker, Fl.*)

(2906.) **F. Richardsoni,** Hook., Fl. II., 250.

Arctic sea-coast. (*Hooker, Fl.*) Alaska. (*Vasey.*)

(2907.) **F. rubra,** Linn.; Hook., Fl. II., 250.

All forms of this species have running root-stocks. Cape Forteau, Yarmouth, N.S., and North Sydney, Cape Breton. (*Macoun & Burgess.*) Rivière de Brig, Anticosti, and along the Gaspé coast, near Fox River. (*Macoun.*) London, Ont., and Emerson, Man. (*Burgess.*) Near Victoria, Vancouver Island. (*Fletcher.*) Abundant along the whole coast of Vancouver Island, from Esquimalt to Qualicum. (*Macoun.*) Sitka, and Kotzebue Sound. (*Rothr. Alask.*) Bartlett Bay, and Sitka, Alaska. (*Meehan.*) Queen Charlotte Islands. (*Dawson.*)

Var. **villosa,** Vasey. (MS.)

Festuca rubra, var. I., Hook. Fl. II., 250.

North Fork of Old Man River, Rocky Mountains. (*Dawson.*) Apparently not rare in the foot-hills of the Rocky Mountains. (*Macoun.*)

Besides the above variety, we have vars. *genuinea, longiseta,* and *planifolia,* Vasey, which may be distinct enough to separate them from the species. All are common on the coast of Vancouver Island, near Victoria.

(2908.) **F. scabrella,** Torr.; Hook., Fl. II., 252. (Bunch Grass.)

F. Macounii. Vasey; Macoun, Cat. No. 2204.
Melica Hallii, Vasey, Coult. Bot. Gaz. VI., 296.

Summit of Mount Albert, Shickshock Mountains, Gaspé, Q.; Moose Mountain Creek, and Souris Plain, Assiniboia. (*J. M. Macoun.*) Abundant around Brandon, and west to Moose Mountain and Moose Jaw; common at Calgary, and westward in the foot-hills at Morley; on mountains at Spence's Bridge, B.C. (*Macoun.*) Middle Fork of Old Man

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River, Rocky Mountains; Frances Lake, lat. 61°, and Finlayson Lake. lat. 62°, N.W.T. (*Dawson.*) Alpine districts of the Rocky Mountains. (*Hooker, Fl.*) On rocky slopes at Lytton, B.C. (*Fletcher.*)

(2909.) **F. subulata,** Bong.; Hook., Fl. II., 250.

Sitka. (*Hooker, Fl.*) We know nothing of this species. It may be included in some other form under another name. Possibly a form of *F. ovina.*

(2910.) **F. tenella,** Willd.; Pursh., Fl. I., 83.

F. bromoides, Michx., Fl. I., 66.

Dry hillsides; not common eastward. Sheldrake River, Q. (*St. Cyr.*) Border of Oak Hill Pond, Hastings Co.; common on Rice Lake Plains, near Castleton, Northumberland Co., Ont. (*Macoun.*) Sandy thickets, Point Pelée, Lake Erie. (*Burgess.*) Vicinity of Hamilton, Ont. (*Logie.*) Port Stanley, Lake Erie; abundant at Spence's Bridge, and northward through British Columbia; dry hills around Victoria, Mount Finlayson, and Nanaimo, Vancouver Island. (*Macoun.*) Cadboro Bay, Vancouver Island. (*Fletcher.*)

730. BROMUS, Linn. Gen. 89. (BROME-GRASS)

(2911.) **B. Aleutensis,** Trin.; Vasey, Cat. Grasses U.S. 92, (1885.)

Alaska. (*Vasey.*) Ounalashka. (*Rothr. Alask.*)

(2912.) **B. breviaristatus,** Buckl., Proced. Philad. Acad. 98, (1862.)

Ceratochloa breviaristata, Hook., Fl. II., 253.

Not uncommon in the Rocky Mountains, and far eastward in the northern prairie region. Along the Red Deer River, Porcupine Mountain, Man.; Red Deer Lakes, and Cypress Hills, and northward to the Athabasca. (*Macoun.*) South Kootanie Pass, Rocky Mountains. (*Dawson.*) Summit of Skagit Mountain, B. C. (*Bowman.*) Vicinity of Victoria, Vancouver Island. (*Fletcher.*) In woods and thickets, not uncommon, Vancouver Island. (*Macoun.*) Near the sources of the Columbia. (*Douglas.*)

(2913.) **B. ciliatus,** Linn.; Pursh, Fl. I., 85.

B. purgans, Linn; Hook., Fl. II., 262, in part.

Common eastward in thickets and damp places. Pictou, N. S. (*McKay.*) On low damp places at Annapolis and Truro, N.S. (*Macoun.*) On intervales, Bass River; and Salmon River, N.B. (*Fowler, Cat.*)

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Little Tobique River, N.B. (*Hay.*) North of the Restigouche, at Campbellton, and along the Bay of Chaleur; Salt Lake, Anticosti. (*Macoun.*) Ste. Anne des Monts River, Gaspé, Q. (*Porter.*) Ellis Bay, Anticosti; Pentecost River, Q. (*St. Cyr.*) Abundant in sandy places along the Rivière Rouge, Argenteuil Co., Q. (*D'Urban.*) Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Bank of the St. Lawrence River, near Prescott, Ont. (*Billings.*) Very common in wet woods and thickets throughout central Ontario, and north-westerly to Lake Nipigon and Lake Superior, and south to Pigeon River. (*Macoun.*) Port Colborne, Lake Erie. (*McGill Coll. Herb.*) Rocky thicket, Kingston, Ont. (*Millman.*) Vicinity of Hamilton, Ont. (*Logie.*) River flats, London, Ont. (*Burgess. Millman.*) Lake Mistassini, N.E.T.; Severn River, Keewatin; Willow Point, Lake Winnipeg; and Moose Mountain, Man. (*J. M. Macoun.*) Oxford House, Keewatin. (*R. Bell.*) Vicinity of Winnipeg, Man. (*Prof. Fowler.*) Sand Creek, Kootanie Valley, Rocky Mountains. (*Dawson.*) Rather common in wet meadows and thickets, from Morley westward to the Columbia Valley, and Selkirk Mountains; common on Vancouver Island. (*Macoun.*) Goose Creek Mountains, Cariboo, B.C. (*Bowman.*) Sooke, Vancouver Island. (*Dawson.*) Vicinity of Victoria, Vancouver Island. (*Fletcher.*) Kotzebue Sound. (*Rothr. Alask.*)

Vars. **ligulatus & pauciflorus,** Vasey. (MS.)

These varieties, with some others, are common on many parts of Vancouver Island, but may not be distinct enough to remain separated from the species.

(2914.) **B. Hookerianus,** Thurber, Bot. Wilkes Exp., 493.

Ceratochloa grandiflora, Hook., Fl. II., 253.

Confined to the Pacific coast. Not uncommon in thickets at Goldstream, Cadboro Bay, Nanaimo, and Qualicum, Vancouver Island. (*Macoun.*)

Var. **minor,** Scribner; Vasey, Cat. Grasses U. S. 92, (1885.)

Bromus virens, Buckl., Proced. Philad. Acad. 98 (1862).

Not uncommon on Vancouver Island, at Nanaimo, and Qualicum. (*Macoun.*)

(2915.) **B. Kalmii,** Gray, Man. Ed. V., 634.

B. purgans, Torr., Flora, N. York, II., 463; Pursh, Fl. I., 85; Hook., Fl. II., 252, in part.

Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Rocky woodlands west of Brockville. (*Billings.*) Dry rocky hillsides, Marmora, Hastings Co.;

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Wooler, Northumberland Co.; and dry woods, Balsam Rapids, Victoria Co., Ont. (*Macoun.*) Sandy woodlands, London, Ont. (*Burgess. Millman.*) Vicinity of Hamilton, Ont. (*Logie.*) Very abundant throughout the northern part of the prairie region, on gravel ridges or margins of couleès, Long Lake, Thunder Creek, and south of Battleford. (*Macoun.*) Red River, Man., 1827. (*Douglas.*)

(2916.) **B. Macounii,** Vasey, Bull. Torr. Bot. Club XV., 48.

Not uncommon on dry hills. Cedar Hill, and Nanaimo, Vancouver Island. (*Macoun.*) Cañon, Lewes River, lat. 62°, N.W.T. (*Dawson.*)

(2917.) **B.** MAXIMUS, Desf.; Bot. Calif. II., 315.

Sparingly introduced at Victoria, Vancouver Island. (*Macoun. Fletcher.*)

(2918.) **B.** MOLLIS, Linn.; Pursh, Fl. I., 85.

Introduced and naturalized on both the east and west coasts. Along the sea-shore at Yarmouth, N.S. (*Macoun.*) Quebec city. (*St. Cyr.*) Very rare in fields and by roadsides at London, Ont. (*Burgess. Millman.*) Abundant in cultivated ground and under oaks throughout the southern part of Vancouver Island. (*Macoun. Fletcher.*)

(2919.) **B. Orcuttianus,** Vasey, Coult. Bot. Gaz. X., 223.

Not rare in the oak groves at Cadboro, and Oak bays, near Victoria, Vancouver Island. (*Macoun.*)

(2920.) **B. Pumpellianus,** Scribner, Bull. Torr. Bot. Club, XV., 9.

Not uncommon in the prairie region on river banks and couleè margins, from Fort Ellice to Calgary, and thence westward in the Rocky Mountains to the Columbia Valley; northward in British Columbia to Quesnel. (*Macoun.*) Shuswap Lake, B.C. (*Prof. Fowler.*)

(2921.) **B.** RACEMOSUS, Linn.; Gray, Man. Ed. V., 634.

Introduced and naturalized in the older settlements. Among wheat at Bass River, N.B. (*Fowler, Cat.*) Quebec city. (*St. Cyr.*) Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Roadsides and railway tracks at London, and Essex Centre, Ont. (*Burgess.*) Pitt River, B.C. (*Hill.*) Abundant in meadows, waste places, and cultivated grounds, Vancouver Island. (*Macoun. Fletcher. Dawson.*) Vancouver city, Burrard Inlet, B.C. (*Prof. Fowler.*)

(2922.) **B.** SECALINUS, Linn. (Chess or Cheat.)

Introduced and naturalized in all parts of the country. This species

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is much less common than thirty years ago. Now, the farmers have excellent fanning mills, and wheat is better cleaned, and hence pure seed is sown. At the period spoken of many believed that winter-killed wheat changed into chess. Since the seed is cleaner and the land drained, chess has almost disappeared.

(2923.) **B. subulatus,** Ledeb.; Vasey, Cat. Grasses, U.S. 93, (1885.)
Ounalashka. (*Rothr. Alask.*) Unknown to us as well as the next.

(2924.) **B. Sitchensis,** Bong.; Hook., Fl. II., 253.
Sitka. (*Hooker, Fl. Rothr. Alask.*)

(2925.) **B.** TECTORUM, Linn.; Vasey, Cat. Grasses U. S. 93, (1885.)
Introduced at Kingston, Ont. (*Millman.*)

(2926.) **B.** SEGETUM, Schl.; Vasey, Cat. Grasses U. S. 93, (1885.)
Introduced with seed-grain at Shuswap Lake, B.C. (*Prof. Fowler.*)

731. LOLIUM, Linn. Gen. 95. (DARNEL.)

(2927.) **L.** PERENNE, Linn. (Rye Grass.)

Introduced and cultivated in some localities near Pictou, N. S. (*McKay.*) Near railway depot, Carleton, N.B. (*Fowler, Cat.*) Jacques Cartier River, Q. (*St. Cyr.*) Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Neighborhood of Belleville, Ont. (*Macoun.*) Hamilton, Ont. (*Logie.*) Meadows at London, and Kingston, Ont. (*Burgess. Millman.*) Quite common on Vancouver Island, where it produces excellent hay. (*Macoun.*)

A variety with very long glumes has been gathered at London, Ont., by Dr. Burgess. He writes that it is not *L. temulentum.*

(2928.) **L.** TEMULENTUM, Linn. (Poison Darnel.)

Rather rare or seldom detected. Near railway depot, Carleton, N.B. (*Fowler, Cat.*) Along a new road at Cameron Lake, in the centre of Vancouver Island. Introduced in horse feed. (*Macoun.*)

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732. ACROPYRUM, J. Gærtn. (WHEAT-GRASS)

(2929.) **A. caninum,** Reich. Icon. Fl. Germ. 119.

Triticum caninum, Schreb.; Hook., Fl. II., 254; Macoun, Cat. No. 2220.

Rather rare on gravel banks eastward; abundant in the northern prairie region. On intervales, Coal Branch, Kent Co., N.B. (*Fowler, Cat.*) Environs of Quebec; rocky bank of Madeline River, Gaspé, Q. (*St. Cyr.*) Mount Albert, Gaspé, Q. (*Porter.*) Banks of the Moira, at Belleville; rocky banks, Shannonville, Hastings Co.; on the Trent, above Trenton, Ont.; woods, Niagara Falls. (*Macoun.*) Vicinity of Hamilton, Ont. (*Logie.*) London, Ont.; and Saugeen, Lake Huron. (*Burgess.*) Kaministiqua River, west of Lake Superior; very abundant from Winnipeg westward to Edmonton, on the Saskatchewan; common from Calgary through the Rocky Mountains to the Columbia Valley. (*Macoun.*) Sand Creek, Kootanie Valley, Rocky Mountains; Nicola, and Kamloops, B.C. (*Dawson.*) Lake Winnipeg to the Saskatckewan. (*Hooker, Fl.*) Emerson, and Brandon, Man, and Shuswap Lake, B.C. (*Prof. Fowler.*)

(2930.) **A. dasystachyum,** Vasey, Cat. Grasses U. S. 96, (1885.)

Triticum dasystachyum, Gray, Man. Ed. V., 638.

T. repens, var. *dasystachyum,* Hook., Fl. II., 254.

Sandy shore of Lake Huron, at Saugeen, Ont. (*Burgess.*) North shore of Lake Superior. (*Agassiz.*) West coast of Lake Superior; western Manitoba, Long Lake, Old Wives Lakes, River That Turns, Fort Pitt, and throughout the northern prairie region to Edmonton; from Calgary westward to Castle Mountain, Rocky Mountains. (*Macoun.*) Souris Plain, Man. (*J. M. Macoun.*) Echmanish River, Keewatin; and Nelson River, near York Factory, Hudson Bay. (*R. Bell.*)

(2931.) **A. divergens,** Nees.; Vasey, Cat. Grasses U. S. 96, (1885.)

Triticum strigosum, Less.; Macoun, Cat. No. 2221.

Bunch grass of British Columbia, and the drier parts of the Rocky Mountains. Common on the dry slopes of the mountains along the Bow River, from Morley westward to Banff; on dry slopes of the Thompson and Fraser rivers, B.C. (*Macoun.*) Abundant on the higher slopes at Lytton, B.C. (*Fletcher.*) North Point of Texada Island, Gulf of Georgia, B.C. (*Dawson.*) An awnless variety is found in great profusion on the gravel ridges at the mouth of the Kicking Horse River, Columbia Valley.

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Var. **tenue,** Vasey, Cat. Grasses U. S. 96, (1885.)

Triticum ægilopiodes, Turcz.; Gray, Proced. Acad. Phil., 79 (1363).
T. caninum, var. β., Hook. Fl. II., 255.

On dry slopes in Bow River valley, near Old Bow Fort, and westward mixed with the species. (*Macoun.*)

(2932.) **A. glaucum,** R. & S., var. **occidentale,** V. & S.

Triticum repens, Linn., var. *glaucum*, Vasey.

Very abundant in the prairie region, and westward to the Fraser River. Souris Plain, Man. (*J. M. Macoun.*) Bank of Souris River, Assiniboia. (*Burgess.*) Red River, Man., 1827 (*Douglas.*) Long Lake, Red Deer Lakes, and south of Battleford; rather common from Calgary westward on dry benches through the Rocky Mountains to Hector. (*Macoun.*) Near Wild Horse Creek, Kootanie Valley, Rocky Mountains. (*Dawson.*) A form between this species and *A. divergens* is abundant along the Thompson River, near Lytton, B.C. (*Macoun.*) Very variable, and extending from the Saskatchewan to the Arctic sea. (*Hooker, Fl.*) Kotzebue Sound. (*Rothr. Alask.*)

This is one of the finest grasses on the prairie for hay or pasture. It seems to prefer saline and damp soil, and does not grow in bunches but singly. There are numerous forms of this which are generally referred to the next, but which I include here. Sir John Richardson seems to have found the species all the way to the Arctic sea.

(2933.) **A. REPENS,** Beauv.; Vasey, Cat. Grasses U. S. 96, (1885.)

Triticum repens, Linn.; Macoun, Cat. No. 2217.

We include all our indigenous forms under *A. glaucum*, and under this place the notices of the introduced plant, which is a vile weed in many parts of the old settlements. Reported from Newfoundland, Nova Scotia, New Brunswick, Quebec, and Ontario, and even from Vancouver Island, on the Pacific coast.

(2934.) **A. tenerum,** Vasey, Coult. Bot. Gaz. X., 259.

Lake Mistassini, N.E.T.; and Severn River, Keewatin. (*J. M. Macoun.*) Speke's Point, Lake Nipigon; abundant on prairies from Winnipeg westward to the Touchwood Hills, and Edmonton, N. W. T. (*Macoun.*) Pine River Pass, lat. 55°, Rocky Mountains. (*Dawson.*) Brandon, and Emerson, Man. (*Prof. Fowler.*) Red River, Man., 1827. (*Douglas.*) Quite common on dry slopes and in meadows westward from Calgary through the Rocky Mountains to the Columbia Valley; a peculiar form is not uncommon on Vancouver Island, at Goldstream, and Nanaimo. (*Macoun.*)

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(2935.) **A. violaceum,** Lange; Vasey, Cat. Grasses U.S. 97, (1885.)
Triticum violaceum, Hornem.; Macoun, Cat. No. 2219.

On the summit of Mount Albert, Gaspé, Q. (*Porter.*) Touchwood Hills, Long Lake, Assiniboia, and westward to Edmonton; rather common in the Bow River valley, from Calgary westward to Kicking Horse Lake, in the Rocky Mountains. (*Macoun.*) Lake Lindeman, lat. 59° 40′; Pelly Banks, lat. 62°; and Lewes River, lat. 61°, N.W.T. (*Dawson.*) Fort Conger, Grinnell Land, lat. 81°, 44′. (*Lieut. Greely.*) Greenland. (*Lange.*)

733. SECALE, Linn. (RYE)

(2936.) **S.** SATIVUM, Linn.

Cultivated in most parts of the country, and occasionally met with in meadows and wheat fields.

734. TRITICUM, Linn. (WHEAT)

(2937.) **T.** VULGARE, Linn.

Many varieties are cultivated. It would be an interesting study if a complete series of these were grown at the Experimental Farm, and specimens of them dried and mounted for future reference. Over two hundred varieties are named and in collections in Europe. Many of the new varieties lately cultivated are no doubt old forms brought into cultivation. The Wild Goose Wheat of Edmonton turns out to be *Triticum Polanicum* or Poland Wheat, and was known over 150 years ago. The legend that this wheat was obtained from the crop of a wild goose may be true, as Linnæus himself believed it to be a native of Central Asia.

735. HORDEUM, Linn. (BARLEY)

(2938.) **H. jubatum,** Linn.; Pursh, Fl. I., 89. (Wild Barley.)

On the sea-coast, and on saline soil in the prairie region. Bedford, N.S. (*Sommers, Cat.*) Salt marshes at Truro, Annapolis, and Yarmouth, N.S. (*Macoun.*) Pictou, and Magdalen Islands, N.S. (*McKay.*)

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Sandy soil along the Gult shore, N.B. (*Fowler, Cat.*) Ellis Bay, Anticosti (*St. Cyr.*) Salt Lake, and English Bay, Anticosti; marshes along the Gaspé coast, Q. (*Macoun.*) Tadousac, St. Lawrence River. (*A. T. Drummond.*) Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) North shore of Lake Superior. (*Agassiz.*) Sault Ste. Marie. (*R. Bell.*) Sands at the mouth of Current River, at the Pic, and at Fort William, Lake Superior; also at Nipigon House, Lake Nipigon. (*Macoun.*) Lake shore, Port Arthur, Lake Superior; Emerson, Man. (*Burgess.*) Red River, prairie generally, and westward to Turtle Mountain. (*Dawson. Millman.*) Nelson River, Keewatin. (*R. Bell.*) Moose Factory, James Bay. (*Cottar & Dr. Hayden.*) Lake Mistassini, N.E.T.; Charlton Island, and Fort George, James Bay: Severn River, Keewatin; Souris Plain, Man. (*J. M. Macoun.*) Red River, Man., 1827. (*Douglas.*) Common on saline soil around ponds, from Winnipeg westward to the mountains, and northward to Peace River, and Lake Athabasca; in the foot-hills of the Rocky Mountains, and westward to Castle Mountain; vicinity of Victoria, and along the coast of Vancouver Island. (*Macoun.*) Milk River Ridge, Alberta; Lewes River, lat. 61°, N.W.T. (*Dawson.*) Fort Yukon, Yukon River. (*Rothr. Alask.*) Plains of the Saskatchewan to the Mackenzie River. (*Hooker, Fl.*) Kamloops, B.C. (*Prof. Fowler.*)

(2939.) **H.** MURINUM, Linn.; Bot. Calif., II., 225.

Introduced in ballast, at Victoria, and Nanaimo, Vancouver Island. (*Macoun.*)

(2940.) **H. pratense,** Huds.; Hook., Fl. II., 256.

H. nodosum, Linn.; Bot. Calif. II., 325.

East end of Cypress Hills, Alberta. (*Macoun.*) Abundant on the coast of Vancouver Island, at Victoria, Cadboro Bay, Nanaimo, Qualicum, and Alberni. (*Macoun.*) Esquimalt, Vancouver Island. (*Fletcher.*) North end of Texada Island, Gulf of Georgia, B.C.; Queen Charlotte Islands. (*Dawson.*) Sitka, and Ounalashka. (*Rothr. Alask.*) Bartlett Bay, Alaska. (*Meehan.*) Vancouver city, Burrard Inlet, B.C. (*Prof. Fowler.*) Sitka. (*Barclay.*)

(2941.) **H. pusillum,** Nutt., Gen. I., 37.

Cadboro and Oak bays, Vancouver Island; also along the Canada Southern Railway, at Amherstburgh, Ont. Introduced from the west along the railway. (*Macoun.*)

(2942.) **H.** MARITIMUM, With.; Hook., English Bot., 505.

Introduced in ballast at Nanaimo, Vancouver Island. (*Macoun.*)

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736. ELYMUS, Linn. (RYE-GRASS.)

(2943.) **E. arenarius,** Linn.; Hook., Fl. II., 255.

Common on sand beaches along the coasts of Vancouver Island, both on the east and west sides of the island. (*Macoun.*) Queen Charlotte Islands, B.C. (*Dawson.*) Vancouver city, Burrard Inlet, B.C. (*Prof. Fowler.*) Island of Kodiak. (*Barclay.*) North-west coast to Kotzebue Sound. (*Hooker, Fl.*) Norton Sound to Point Barrow. (*Rothr. Alask.*) Greenland. (*Lange.*)

Owing to the confusion that seems to exist between this species and *E. mollis*, I have placed all the notices of the western form under *E. arenaria*, and the eastern and interior ones under the *E. mollis*. It is extremely probable that they are both forms of one species.

(2944.) **E. Americanus,** Vasey & Scribner.

E. Sibiricus, Linn.; Hook., Fl. II., 255 ; Macoun, Cat. No. 2224.

All specimens hitherto referred to *E. Sibiricus* are included by the authors in this species, and the Siberian plant is not considered by them an American form. Maimainse, east coast of Lake Superior; Pine Portage, Nipigon River, Ont.; Moose Jaw Creek, east end of Cypress Hills, and north-westward to Peace River, at Dunvegan. (*Macoun.*) Pine Pass, Rocky Mountains, lat. 55°. (*Dawson.*) Rather common in the valleys of the Rocky and Selkirk mountains; very abundant in damp thickets on every part of Vancouver Island. (*Macoun.*) Vicinity of Victoria, Vancouver Island. (*Fletcher.*) Fraser Valley, near Yale, B.C. (*Bowman.*) Sitka. (*Rothr. Alask.*) Emerson, and Winnipeg, Man.; also Vancouver city, Burrard Inlet, B.C. (*Prof. Fowler.*)

(2945.) **E. Canadensis,** Linn.; Pursh, Fl. I., 89. (Wild Rye.)

A fine stout grass growing on river banks and dry hillsides throughout Canada. Pictou, N.S. (*McKay.*) Sussex and Petitcodiac; Eel River, Carleton Co., N.B. (*Fowler, Cat.*) Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Abundant on rocky banks of the Moira and Trent, and their branches in central Ontario. (*Macoun.*) Vicinity of Hamilton, Ont. (*Logie.*) London, and Point aux Pins, Lake Erie. (*Burgess.*) Elk Island, Lake Winnipeg. (*J. M. Macoun.*) North shore of Lake Superior. (*Agassiz.*) Côteau de Missouri, and Wood-end, Assiniboia. (*Burgess.*) Souris Plain, Man. (*J. M. Macoun.*) Brandon, and near Fort Ellice, Man.; Moose Jaw Creek, Long Lake, and source of Qu'Appelle River, Assiniboia, and westward in the northern prairie to the Rocky Moun-

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tains; on gravelly banks, in the Columbia Valley. (*Macoun.*) Old Man River, Rocky Mountains; also Wood-end, and Turtle Mountain, 49th parallel. (*Dawson.*) Red River, Man., 1827. (*Douglas.*)

Var. **glaucifolius,** Gray, Man. Ed. V., 639.
E. glaucifolius, Willd.; Pursh, Fl. I., 89.

Foliage glaucus and awns longer and more spreading than the type. The difference is more marked in living plants. Niagara Falls; on rocky banks. (*Burgess.*) Sand banks, Prince Edward Co., Ont. (*Millman.*) On rocks, Heely Falls, Northumberland Co., Ont. (*Macoun.*) Vicinity of Hamilton, Ont. (*Logie.*) Point Edward, River St. Clair, Ont. (*J. M. Macoun.*) Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Sandy shore, Lake of the Woods. (*Dawson.*)

(2946.) **E. condensatus,** Presl, Rel. Hænk. I., 265.

In saline marshes and swamps, both east and west of the Rocky Mountains. Ribstone Creek, east of Hand Hills, Alberta; westward from Medicine Hat to Rocky Mountains; also at Cache Creek, B.C. (*Macoun.*) Kootanie Pass, Rocky Mountains; also Similkameen River, B.C. (*Dawson.*) Ladner's Landing, Lower Fraser, B.C. (*Fletcher.*)

(2947.) **E. dasystachys,** Trin.; Vasey, Cat. Grasses U.S. 99, (1885.)

Severn River, Keewatin. (*J. M. Macoun.*) Nelson River, Keewatin. (*R. Bell.*) North Fork of Old Man River, Rocky Mountains. (*Dawson.*) Abundant on hillsides, and in burnt woods from Calgary westward through the Rocky Mountains to the Columbia Valley; very common in northern British Columbia to McLeod's Lake, lat. 55°. (*Macoun.*) Dease River, B.C., lat. 59°. (*Dawson.*)

(2948.) **E. Macounii,** Vasey, Cat. Grasses U.S. 99, (1885.)

Abundant in many parts of the prairie region, extending from Qu'Appelle westward to the Eagle Hills, and southward to the Hand Hills, where it is particularly common, as well as at Morley. A fine grass growing chiefly in bunches.

(2949.) **E. mollis,** Trin.; Hook., Fl. II., 255.
E. arenarius, var. *β. villosus*, E. Meyer, Labrad. 20.

Abundant along the Atlantic and Gulf coasts. Nain, and Ford's Harbor, coast of Labrador; Cape Prince of Wales, Nottingham Island, and Digge's Island, Hudson Strait. (*R. Bell.*) Pictou, N.S. (*Sommers, Cat.*) Cape Forteau, near Yarmouth, and Halifax, N.S. (*Macoun & Burgess.*) Sand beaches, Kouchibouguac, and at Restigouche, N.B. (*Fowler, Cat.*) Ellis Bay, Anticosti. (*St. Cyr.*) Along the St. Lawrence, at Tamiscouata. (*Pringle.*) North shore of Lake Superior.

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(*Agassiz.*) On sand at the mouth of Current River, and along the north-east coast of Lake Superior; east coast of Lake Nipigon. (*Macoun.*) Along James Bay, and north to York Factory, Hudson Bay. (*J. M. Macoun.*) Between Fort Churchill and Repulse Bay. (*Dr. Rae.*) Saskatchewan to Bear Lake, and the Arctic shores. (*Hooker, Fl.*) Greenland. (*Lange.*)

(2950.) **C. striatus,** Willd.; Pursh, Fl. I., 89.

E. villosus, Muhl.; Pursh, Fl., I., 89; Hook., Fl. II., 256.

We have never seen Canadian specimens of this species. Niagara Falls, and London, Ont. (*Burgess.*) Vicinity of Hamilton, Ont. (*Logie.*) Canada. (*Goldie,* in *Hooker, Fl.*)

(2951.) **E. Virginicus,** Linn.; Michx., Fl. I., 65; Pursh, Fl. I., 89; Hook., Fl. II., 255.

Abundant in the alluvium of river flats. Quite common at Whycocomagh, Cape Breton, and Truro, N.S. (*Macoun & Burgess.*) On intervales at Hampton, and Coal Branch, N.B. (*Fowler, Cat.*) Ellis Bay, Anticosti; St. Foye Road, Q. (*St. Cyr.*) Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Kemptville, Ont. (*Porter.*) Low ground along brooks and large streams throughout central Ontario, west to Owen Sound, and north-westerly to the west side of Lake Superior. (*Macoun.*) Vicinity of Hamilton, Ont. (*Logie.*) London, Ont.; in the river flat; Emerson, Man. (*Burgess.*) Rosseau River, Man. (*Dawson.*)

Var. *β.* **submuticus,** Hook., Fl. II., 255.

Along the Nation River, at Casselman, near Ottawa. (*Fletcher, Fl. Ott.*) Cumberland House, on the Saskatchewan; common east of the Rocky Mountains. (*Hooker, Fl.*) Not uncommon along the Assiniboine and Qu'Appelle rivers, Man. (*Macoun.*) Easily distinguished from the species by the short awn.

(2952.) **E. Vancouverensis,** Vasey, Bull. Torr. Bot. Club, XV., 48.

Abundant, growing in sand close to the sea; on Mr. Fuller's farm, Oak Bay, near Victoria, Vancouver Island. Extensively creeping in the sand, by running root-stocks. Collected June 30th, 1887. (*Macoun.*)

(2953.) **E. Columbiana,** (120.)

Abundant, growing in tufts on gravel close to the sea, at Qualicum, Vancouver Island. (*Macoun.*) Texada Island, Gulf of Georgia, B.C. (*Dawson.*) A very interesting grass with the general appearance of *A. tenerum.*

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737. ASPRELLA, Willd. (BOTTLE-BRUSH GRASS.)

(2954.) **A. hystrix,** Willd.; Hook., Fl. II., 257.

Elymus hystrix, Linn.; Torr., Fl. I., 138.

Gymnostichum hystrix, Schreb.; Macoun, Cat. No. 2231.

On rocky soil in woods, not common. Eel River, Carleton Co., N.B. (*Fowler, Cat.*) Between Florenceville, and Andover, N.B. (*Brittain.*) St. Remi, Q. (*McGill Coll. Herb.*) Rocky woods, near Ottawa. (*Fletcher, Fl. Ott.*) Common near Prescott, Ont. (*Billings.*) Rocky woods and thickets around Belleville, Ont.; woods at Owen Sound, Ont. (*Macoun.*) Vicinity of Hamilton, Ont. (*Logie.*) Near Kingston, Ont. (*Millman.*) Thickets at London, Ont. (*Burgess.*) Canada to the Saskatchewan. (*Hooker, Fl.*)

Addendum.

(2955.) **Carex læviculmis,** Meinch. (ined.)

C. elongata, Hook., Fl. II., 213.

Sitcha. (*Bong.*) I am informed by Mr. Bennett that Charles F. Meinchausen, Director of the Botanical Museum, St. Petersburgh, has just named the Alaskan *C. elongata* as above, but the description has not yet been published.

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GEOLOGICAL AND NATURAL HISTORY SURVEY OF CANADA.
ALFRED R. C. SELWYN, C.M.G., LL.D., F.R.S., F.G.S., DIRECTOR.

CATALOGUE

OF

CANADIAN PLANTS.

Vol. II.

PART V.—ACROGENS.

BY

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Botanist and Naturalist to the Geological and Natural History Survey of Canada.

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PREFACE.

PART V.

In the Preface to Part IV. it was stated that Part V. would include the ferns and their allies and also the Musci and Hepaticæ. The addendum to the Parts already published had grown so large, however that it was thought better to change our expressed intention, and in the Part now issued—which completes Volume II.—we include an addendum bringing the Parts already published up to date. Part VI. will be published during the ensuing year, and it will include the Characeæ, Musci, and Hepaticæ, about 1000 species in all.

Since the publication of Part IV., we have made collections on Prince Edward Island, and on the mainland of British Columbia, as far east as the summit of the Gold Range; Dr. G. M. Dawson collected in British Columbia in 1888–9, and Jas. M. Macoun on the Athabasca, Clearwater, and Upper Churchill rivers in 1888, the results of these collections have been embodied in this Part. A number of collectors whose names will appear in the addendum have assisted me with notes and specimens, and to them hearty thanks are returned, and it is hoped that they and others will continue the good work. Communication has been kept up with specialists both in Europe and America, and the addendum will show the good results obtained.

Dr. Sereno Watson has examined many critical species, and has been of great assistance in many instances. Dr. N. L. Britton, of Columbia College, New York, has critically examined numerous genera, and is at present at work on others. Prof. Trelease, Director of the Shaw School of Botany, St. Louis, has examined our Geraniaceæ and various difficult genera, and Professors Coulter and Rose the whole of our Umbelliferæ, adding many new species and changing considerably the

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nomenclature. Mr. M. S. Bebb, of Rockford, Ill., has examined all our Willows and revised the nomenclature, much of that part of the addendum referring to the Willows being his work. Messrs. Bennett and Beeby have continued their work, and named our Potamogetons and Sparganias. We have been enabled to make the changes in, and additions to, the genus Carex, by the use of Prof. Bailey's Memoir, published by the Torrey Botanical Club, and by his examination of our specimens collected during the past two years. Prof. F. Lamson Scribner has determined all the grasses collected in British Columbia in 1889, and other critical species. The changes and additions in the order Graminese, are either his or have been made at his suggestion. Dr. T. J. W. Burgess, our highest authority on Canadian Ferns, has prepared the orders Ophioglossaceæ and Filices.

JOHN MACOUN.

OTTAWA, May, 1880.

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ACROGENS.

CXIX. EQUISETACEÆ. Horse-tail Family.

737. EQUISETUM, Linn. (SCOURING RUSH.)

(2956.) **E. Telmateia,** Ehrh. Great Horsetail.

E. fluviatile, Linn. Hook. Fl. II., 269.

Along the shores of the Gulf of Georgia on both sides and common in many places on Vancouver Island, especially along the Nanaimo Railway, also on wet banks along the C. P. Ry. from the coast east to Yale, B.C. (*Macoun.*) Shore of Burrard Inlet at Vancouver City. (*Prof. Fowler.*)

(2957.) **E. arvense,** Linn. Common Horsetail. Hook. Fl. II., 269; Pursh, Fl. II., 651.

Abundant on wet undrained loamy soil from Newfoundland westward in all parts of the country to the west coast of Vancouver Island, and northward to Alaska and the Arctic coast.

Var. **campestre,** Milde.

Greenland, Aug., 1888. (*Rosenvinge.*) Nottingham Island, Hudson Strait, 1886. (*Mackenzie.*) Cape Chudleigh, Hudson Strait, Aug., 1884. (*R. Bell*).

(2958.) **E. pratense,** Ehrh.

E. umbrosum, Willd.; Hook. Fl. II., 269.

Damp thickets and sides of ravines; not rare. Windsor and Musquodoboit, N.S. (*How*). Campbellton, N.B. (*Chalmers.*) North West

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Arm, near Halifax, and North Mountain, near Annapolis, N.S.; also Point Fame, coast of Gaspé, Q. (*Macoun.*) Cape Rouge, near Quebec. (*St. Cyr.*) Lake Mistassini and Rupert River, N.E.T. (*J. M. Macoun.*) Owen Sound and Saugeen, Ont. (*Burgess.*) Shores of Lake Nepigon and Lake Superior, and westward through the forest country, Rocky Mountains, and British Columbia mountains to the mountains of Vancouver Island. (*Macoun.*) Carleton House to the Rocky Mountains. (*Drummond.*)

(2959.) **E. sylvaticum,** Linn.; Hook. Fl. II., 269.

In loamy woods and river bottoms; not rare. Newfoundland. (*Miss Brenton, Rev. A. Waghorne.*) Nain, coast of Labrador. (*R. Bell.*) Very common throughout New Brunswick. (*Fowler's Cat.*) Common in Nova Scotia. (*Sommer's Cat.*) Yarmouth and Truro, N.S.; Anticosti; and at Tignish, Prince Edward Island. (*Macoun*). Gomin's woods, near Quebec. (*St. Cyr.*) Vicinity of Ottawa. (*Fletcher, Fl. Ott.*) Wet places, Lake Joseph, Muskoka, Ont. (*Burgess.*) Common in cool woods from Carleton Place, near Ottawa, westward through northern Ontario to Lake Nepigon; also in the valley of the Columbia at Donald, in the Selkirk Mountains, and at Stewart Lake, B.C. (*Macoun.*) From the Saskatchewan to Fort Franklin on the Mackenzie River. (*Hook. Fl.*) Greenland. (*Dr. Walker.*) Kotzebue Sound. (*Roth. Alask.*)

(2960.) **E. palustre,** Linn.; Hook. Fl. II., 269.

In wet ditches and on springy places along rivers; not rare. Near Bedford, N.S. (*Sommer's Cat.*) Mistassini, N. E. Ter. (*J. M. Macoun.*) Knee Lake, Nelson River, and York Factory, Hudson Bay. (*R. Bell.*) Low ground, Sorel, Q. (*Burgess.*) Ste. Clotilde, Arthabaska Co., Q. (*St. Cyr.*) North Hastings, and east side of Lake Nepigon, Ont.; Red Deer River, 10 miles above Red Deer Lake, Lat. 53°, also in river bottoms westward to Lesser Slave Lake and Peace River; rather common along the Bow River at Kananaskis Station, C.P.Ry., and along Beaver Creek, in the Selkirk Mountains and abundant along Shuswap Lake, especially at Sicamous, B.C. (*Macoun.*) Lake Huron to the shores of the Arctic Sea. (*Hook. Fl.*)

Var. **polystachyum,** Hook.

E. limosum var. β. Candelabrum, Hook. Fl. II. 269?

Muskeg Island, Lake Winnipeg, Aug., 1884. (*J. M. Macoun.*) Growing in water at Lake Winnipeg. (*Hook. Fl.*)

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(2961.) **E. littorale,** Kühlewein.

Mouth of Lake Champlain, Q. (*Pringle.*) The specimens referred to this species by Milde (*Gray Manual,* 654) were collected by the author at Belleville, Ont., in the summer of 1860, and sent to Sir William Hooker, who referred them to *E. limosum* var. *fluviatile.* Since then it has been found to be not uncommon along the boggy shores of the Bay of Quinte at Belleville and Little Flat Rock Portage, Lake Nepigon; also at Agassiz, B.C. (*Macoun.*)

It is doubtless common but has been hitherto confounded with the next.

(2962.) **E. limosum,** Linn.; Hook. Fl. II., 269.

E. uliginosum Pursh, Fl. II., 651.

Common along the margins of rivers and lakes, and frequently in marshes in all parts of Canada. Antigonish Co., N.S. (*McKay.*) Kent Co., Tobique Lakes, Nictaw Lake, Carleton Co., and Nipisiquit Lakes, N.B. (*Fowler's Cat.*) Becscie River, Anticosti; Cove Head, Prince Edward Island; also Gaspé Basin, Gaspé, Q. (*Macoun.*) St. Sauveur, near Quebec, and at Ste. Rose, Laval Co., Q. (*St. Cyr.*) Vicinity of Ottawa. (*Fletcher Fl. Ott.*) Swamps at London, Ont. (*Burgess.*) Shallow water, Glenelg, N.S. (*Faribault.*) Ponds of Salmon River, at Truro, N.S. (*Campbell.*) Common throughout Ontario and westward to the Rocky Mountains, British Columbia and on the west coast of Vancouver Island at Barclay Sound, and north to Lat. 55° at McLeod's Lake B.C. (*Macoun.*)

(2963.) **E. lævigatum,** A. Braun.

E. hyemale, Hook. Fl. II., 270 in part.

Quite common in the prairie region and in the dry district of British Columbia. Dry bank, Emerson, Man. (*Burgess.*) Maple Creek, Alberta. (*J. M. Macoun.*) Boss Hill Creek and South Saskatchewan near Medicine Hat, Alberta; also at Morley and Canmore, Rocky Mountains; quite common at Kamloops, Spence's Bridge and Câche Creek, B.C. (*Macoun.*) Guichon Creek, B.C. (*Dawson.*)

(2964.) **E. robustum,** A. Braun.

Apparently confined to British Columbia. Wigwam River, Kootanie Valley, B.C. (*Dawson.*) Near Victoria, Vancouver Island. (*Fletcher.*) Wooded slopes, Gordon Head, Telegraph Bay, Vancouver Island; also at Agassiz, B.C. (*Macoun.*)

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(2965.) **E. hyemale,** Linn.; Hook. Fl. II., 270 in part.

Quite common throughout the northern forests, and westward through the mountains to the Pacific. Rather rare at Bass River; also at Drummond, Victoria Co., N.B. (*Fowler's Cat.*) Portage, Kent Co.; Bairdsville and Simmonds, Carleton Co., N.B. (*Brittain.*) Rivière de Brig, and Jupiter River, Anticosti; Brackley Point, and elsewhere on P. E. I.; common along the Gaspé coast, Q. (*Macoun.*) Lac St. Joseph, Portneuf Co., Q. (*St. Cyr.*) Vicinity of Ottawa. (*Fletcher Fl. Ott.*) Gravelly banks, London, Ont. (*Burgess.*) Queen Charlotte Islands. (*Dawson.*)

(2966.) **E. ramosissimum,** Desf.

We refer to this species forms intermediate between *E. hyemale* and *E. variegatum* but which differ from the first in having a short black sheath with soft fragile teeth which are united in groups by thin white membranous margins, and tipped with a long soft point, from the latter by the greater number of ridges, greater size and longer teeth. Speke's Point, Lake Nepigon, Ont., Shawnagin Lake, Vancouver Island. (*Macoun.*)

(2967.) **E. variegatum,** Schleicher, Hook. Fl. II., 270.

In sand by rivers and lakes; not rare. Near Andover, N.B.; rare (*Brittain.*) Rivière de Brig, and Salt Lake, Anticosti, and at Gaspé Basin, Q. (*Macoun.*) Border of the Montmorency River at Beauport, Q. (*St. Cyr.*) Wet places, Niagara Falls. (*Burgess.*) Shore of Lake Ontario, at Presqu'Ile Point, near Brighton; sands, Lake Nepigon; Red Deer River, Lat. 53°, Man.; along the Bow River, in sand and westward through the Rocky Mountains to the Columbia at Donald, in sand along Shuswap Lake, and on the Indian Reservation at Kamloops, B.C.; also along the shores of Horne and Cameron lakes, Vancouver Island. (*Macoun.*) Elk River, Kootanie Valley; along the Upper Liard River, N.W.T. (*Dawson.*) Frequent in Canada and thence to the Saskatchewan and Arctic Sea. (*Hooker Fl.*) Greenland. (*Rosenvinge*). Bartlett Bay, Alaska. (*Meehan.*)

(2968.) **E. scirpoides,** Michx. Fl. II., 281.

E. variegatum var. β. Hook. Fl. II., 270.

Common on the slopes of cool ravines and in swampy woods northward. Nottingham Island, Hudson Strait. (*R. Bell.*) Pictou, N.S. (*McKay.*) Common about River Charlo and Point Le Nim, N.B. (*Fowler's Cat.*) Wet places at Truro, N.S.; Brackley Point and other

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places, Prince Edward Island; Jupiter River, Anticosti, and along the Gaspé coast in woods. (*Macoun.*) Beauport, Quebec Co.; Rivière des Aulnaies and Chambord, Chicoutimi Co., Q. (*St. Cyr.*) Vicinity of Ottawa. (*Fletcher Fl. Ott.*) Low woods, London, Ont. (*Burgess.*) Very common throughout northern Ontario, and westward through the forest to the Rocky Mountains; Bow River Pass, and westward to Donald in the Columbia valley; along a ravine at Hastings, Burrard Inlet, B.C. (*Macoun.*) Middle Branch of North Fork of Old Man River, Rocky Mountains; Eliguck Lake, 1876, Chilcoten Plains, B.C. (*Dawson.*) About the Saskatchewan. (*Hook. Fl.*)

NOTE.—The pages of this Catalogue (5 to 39) including the orders Ophioglossaceæ and Filices have been prepared by T. J. W. Burgess, M.B., F.R.S.C.

CXX. OPHIOGLOSSACEÆ. ADDER-TONGUE FAMILY.

738. OPHIOGLOSSUM, Linn., Gen. Pl., No. 1171. (ADDER-TONGUE.)

(2969.) **O. vulgatum,** Linn., Sp. Pl., 1518. Michx., Fl. Bor.-Am., II., 275. Pursh, Fl. Am. Sept., II., 675. Lawson, Can. Nat., i., 293. Goode, Can. Nat., ix., 301. Macoun & Burgess, Trans. Roy, Soc. Can., ii., sect. iv., 173.

Usually found in the grass of low meadows, and, though rather rare, has a wide range, extending from Nova Scotia westward to Manitoba. In the sand at Brackley Point, Prince Edward Island. (*Macoun.*) In fields near Truro, N.S. (*Campbell.*) Truemanville, N.S. (*A. J. Trueman.*) Hopewell and Cape Enrage, N.B. (*J. Brittain.*) Hemmingford, Que. (*Goode.*) Beechwood, near Hemlock Lake, Ottawa, Ont. (*Fletcher.*) Ferry Point, Belleville, Ont.; beaver meadow between Hooper's Lake and the Hastings Road, Tudor Tp., Hastings Co., Ont.; grassy places along the Trent, McCann's Island, Seymour Tp., Northumberland, Ont.; St. Thomas, Elgin Co., Ont. (*Macoun.*) Valley of the Humber, Toronto, Ont. (*Burgess.*) Low meadow, Port Stanley, Elgin Co., Ont. (*J. Bowman.*) Mouth of Rainy River, Lake of the Woods. (*Dawson.*)

739. BOTRYCHIUM, Swartz, Schrad. Journ. Bot., (1800,) ii., 110. (GRAPE-FERN.)

(2970.) **B. Lunaria,** Swartz, Schrad. Journ. Bot., ii., 110. Hook., Fl. Bor.-Am., II., 265. Lawson, Can. Nat., i., 293. Watt, Can.

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Nat., iv., 364. Macoun & Burgess, Trans. Roy. Soc. Can., ii., sect. iv., 174.

Very variable both in shape and habitat and ranging from Quebec to British Columbia and high northward. Island of Orleans, Que. (*J. F. Whiteaves.*) Rivière du Loup (*en-bas*), Que. (*McCord.*) Island of Anticosti. (*St. Cyr.*) Exposed cliffs near Cape Rosier, Gaspé, Que.; Nepigon Bay, in meadows at Cape Alexander, twelve miles up the Nepigon River, at various points on Lake Nepigon, and at the Pic River, Lake Superior, Ont.; abundant on the prairie close to the sand hills at Flat Creek, Manitoba; on mountain slopes, Bow River Pass, Rocky Mountains; boggy meadow near Fort McLeod, B.C. (*Macoun.*) Middle Branch of North Fork of Old Man River, Rocky Mountains. (*Dawson.*) Near head of Dead Man River, B.C. (*J. M. Macoun.*) Carlton House, on the Saskatchewan, N.W.T. (*Richardson.*) Wet prairies in the Rocky Mountains (*Drummond.*) Echimamish River to Knee Lake, and Churchill River near Hudson Bay, Keewatin. (*R. Bell.*) Open spaces in damp, grassy thickets at the Hudson Bay Co.'s post on Lake Mistassini, and in a similar locality near the Oatmeal Falls on Rupert River, N. E. Ter.; in hard sand between the sand dunes on all the islands in James' Bay, and on Severn River, Keewatin. (*J. M. Macoun.*) Regina, Assa. (*N. H. Cowdry.*)

(2971.) **B. matricariæfolium,** A. Braun, in Dœll., Rhein. Fl., 24 (1843). Watt, Can. Nat., iv., 364. Macoun & Burgess, Trans. Roy. Soc. Can., ii., sect. iv., 175.

In Canada, so far as known, limited to the westward by Lake Superior, but has been found sparingly in Unalashka. At Pictou, N.S. (*McKay.*) Dry grass lands, Cape Blomidon, N.S. (*Macoun & Burgess.*) Truemanville, N.S. (*H. Trueman.*) Petitcodiac and Titusville, N.B. (*Brittain.*) Damp hillsides, under bushes, Dalhousie, N.B.; King's Mountain, Chelsea, Que.; Casselman, Ont. (*Fletcher.*) Black River, P.E.I.; gravelly places on sea cliffs, Cape Rosier. Gaspé, Que.; woods near Belleville, Ont.; pine woods five miles north of Campbellford, Northumberland Co., Ont.; below the railway bridge, Nepigon River, and on islands in Lake Nepigon, Ont.; thickets at Agassiz, B.C. (*Macoun.*)

(2972.) **B. lanceolatum,** Angstrœm, Botan. Notiser (1854) 68. Goode, Can. Nat., ix., 300. Macoun & Burgess, Trans. Roy. Soc. Can., ii., sect. iv., 176.

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Very local in its distribution on shaded, mossy banks of streams, in rich woods, and low pastures. Fields and rich damp woods, Truemanville, N.S. (*H. Trueman.*) Shady places in rich soil, Fredericton and Bass River, N.B. (*Fowler.*) Kennebeccasis, N.B. (*Hay.*) Magog, Que. (*Goode.*) Port Simpson, B.C. (*Anderson.*)

(2973.) **B. simplex,** Hitchcock, Sillim. Am. Journ. of Sci. and Arts, vi. (1823) p. 103. Hook., Fl. Bor.-Am., ii., 265. Watt, Can. Nat., iv., 364. Macoun & Burgess, Trans. Roy. Soc. Can., ii., sect. iv., 177.

B. Virginicum, var. (?) *simplex*, Gray, Man., ed. 2, 602. Lawson, Can. Nat., i., 292.

Occurs in meadows, damp rich woods, and on hillsides. Windsor, N.S. (*How.*) Truemanville, N.S. (*Trueman.*) Petitcodiac and Fredericton, N.B. (*Bailey.*) Dalhousie, N.B. (*Fletcher.*) Prince Edward Island. (*F. Bain.*) Near the sea shore, Temiscouata, Que. (*Thomas.*) Quebec, Que. (*Brunet.*) Montreal, Que. (*McCord.*) A small island at the east end of St. Joseph's Island, Georgian Bay, Ont. (*J. Bell.*) Common in meadows along the Kaministiquia River above Fort William, Lake Superior, Ont.; grassy slope below the peak of Castle Mountain, near Silver City, Rocky Mountains. (*Macoun.*) Between Cumberland House and Hudson Bay, N. W. Ter. (*Drummond.*)

(2974.) **B. ternatum,** Swartz, Schrad. Journ., ii., III., Watt, as var. *Americanum*, Can. Nat., iv., 364. Macoun & Burgess, Trans. Roy. Soc. Can., ii., sect. iv., 177. Burgess, Trans. Roy. Soc. Can., iv., sect. iv., 9.

Botrypus lunarioides, Michx., Fl. Bor.-Am., II., 274.
Botrychium lunarioides, Swartz, Syn. Fil., 172. Gray, Man., 672. Provancher, Fl., Can., 722. Lawson, Can. Nat., i., 292.
Botrychium fumarioides, Willd., Sp. Pl., v., 63. Pursh, Fl. Am. Sept., II., 655.
Botrychium ternatum, Swartz, var. *lunarioides*, Milde, Bot. Monog., 108. Macoun's Cat., No. 2340, var. i.

The type, which has been made to include var. *lunarioides*, var. *rutæfolium*, var. *australe*, and sub-var. *intermedium*, has a very wide range, extending quite across the continent and far northward. Cape Porcupine; Boylston, Guysborough Co.; Rawdon, Hants Co.; and other places in Nova Scotia. (*Ball.*) Bedford and Windsor, N.S.; Rapide de Femme, about six miles below Grand Falls, N.B. (*Jack.*) Rather common in New Brunswick. (*Fowler.*) Prince Edward Island. (*F. Bain.*) Quebec, Que. (*Sheppard.*) Three Rivers, Que. (*Maclagan.*) Isle of Orleans, Que. (*St. Cyr.*) St. Joachim, Que.

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(*Provancher.*) Waste places near Prescott Junction, Ont. (*Billings.*) Hamilton, Ont. (*Buchan.*) London, Ont. (*Saunders.*) Toronto, Blenheim, and Leamington, Ont. (*Burgess.*) Ottawa, Ont.; New Westminster and Victoria, B.C. (*Fletcher.*) Salmon River, N.B. (*J. E. Wetmore.*) In fields and by roadsides, Brackley Point, Prince Edward Island; along the north shore of Lake Superior, at Nepigon River, Red Rock, Fort William, &c.; frequent on the western prairies, especially toward the Saskatchewan; Peace River Pass, Rocky Mountains; rare on the snow slides near the summit of the Selkirk Mountains, B.C., on the line of the C. P. Ry.; also in thickets at Agassiz, B.C., and summit of Mount Arrowsmith, Vancouver Island. (*Macoun*). Mouth of Rainy River, Lake of the Woods, Ont. (*Dawson.*) Oatmeal Falls, Rupert River, N. E. Ter.; Fort George, Hudson Bay. (*J. M. Macoun.*)

Var. **obliquum,** Milde, Bot. Monog., 109. Macoun & Burgess, Trans. Roy. Soc. Can., ii., sect. iv., 178.

B. obliquum, Muhl. in Willd., Sp. Pl., v., 63. Pursh, Fl. Am. Sept., ii., 655. Hook., Fl. Bor.-Am., ii., 265. Lawson, Can. Nat., i., 292.

Is much less frequently seen than the type. New Germany and Oaklands Lake, Mahone Bay, N.S. (*Ball.*) Dry, rich woods near the hop-yard, Belleville, Ont., and in sandy soil on Rice Lake Plains, Ont. (*Macoun.*) Sandy woodland, Niagara Falls, Ont. (*Burgess.*) London, Ont. (*Saunders.*) About Hudson Bay, York Factory, and on the "Height of Land,' in the Rocky Mountains. (*Drummond.*)

Var. **dissectum,** Milde, Bot. Monog., 110. Macoun & Burgess, Trans. Roy. Soc. Can., ii., sect. iv., 178.

B. dissectum, Spreng., Anleitg., 172 (1804.) Muhl. in Willd., Sp. Pl., v., 64. Pursh, Fl. Am. Sept., ii., 656.

Only recorded from Mount Uniacke and New Germany, N.S. (*Ball.*); Halifax, N.S. (*Jack*); and woods near the Whirlpool, Niagara Falls, Ont. (*Macoun.*)

(2975.) **B. Virginianum,** Swartz, Schrad. Journ., ii., 111. Hook. & Baker, Syn. Fil., 448. Watt, Can. Nat., iv., 364. Macoun & Burgess, Trans. Roy. Soc. Can., ii., sect. iv., 179.

Botrypus Virginicus, Michx., Fl. Bor-Am., ii., 274 (1803.)
Botrychium Virginicum, Willd., Sp. Pl., v., 64 (1810). Gray, Man., 671. Pursh, Fl. Am. Sept., ii., 656. Provancher, Fl. Can., 721. Lawson, Can. Nat., i., 292.

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A very abundant species, ranging from the Maritime Provinces to British Columbia, and northward to near the Arctic Circle. Pictou, N.S. (*McKay.*) Port Mulgrave, N.S. (*Ball.*) Cape Blomidon, N.S. (*Lawson.*) North Mountain, Annapolis N.S., and Whycocogmah, Cape Breton. (*Macoun & Burgess.*) Truemanville, N.S. (*H. Trueman.*) Rather common in New Brunswick. (*Fowler.*) Ste. Anne River, Gaspé, Que. (*Porter.*) Isle of Orleans, Que. (*St. Cyr.*) Rocky woods, Jupiter River, Anticosti, Que.; north shore of Lake Superior at Red Rock, Nepigon, Thunder Bay, and up the Kaministiquia River, Ont.; Fort McLeod, Lat. 55°, and lower valley of Fraser River, B.C.; rather rare on grassy slopes and in open woods, from Laggan in the Rocky Mountains, Alta., to Donald in the Columbia Valley, B.C., along the line of the C. P. Ry.; Goldstream, Vancouver Island, and at Agassiz, B.C. (*Macoun.*) Very abundant in open, boggy woods, and in burnt woods of any kind, all around Lake Mistassini, N. E. Ter. (*J. M. Macoun.*) Lower slopes of South Kootanie Pass, Rocky Mountains, Lat. 49°. (*Dawson.*) Oxford House, Keewatin. (*McTavish.*) Common in rich woods about Victoria, and in other parts of Vancouver Island, B.C. (*Anderson.*) One of the commonest ferns in western Quebec and south-western Ontario. (*Macoun, Burgess, Fletcher,* &c.) Banff, Rocky Mountain Park. (*J. Smith.*)

CXXI. FILICES. Fern Family.

740. POLYPODIUM, Linn., Gen. Pl. No. 1179. (POLYPODY.)

(2976.) **P. vulgare,** Linn., Sp. Pl., 1544. Michx., Fl. Bor.-Am., ii., 271. Pursh, Fl. Am. Sept., ii., 658. Lawson, Can. Nat., i., 268. Watt, Can. Nat., iv., 363. Macoun & Burgess, Trans. Roy. Soc. Can., ii., Sect. iv., 180. Burgess, Trans. Roy. Soc. Can., iv., Sect. iv., 10.

P. vulgare, Linn., var. *Americanum,* Hook., Fl. Bor.-Am., ii., 258.
P. Virginianum, Linn., Sp. Pl., 1545. Pursh, Fl. Am. Sept., ii., 658.

A rather variable species as regards the shape and degree of division of the frond and of its pinnæ. Commonly found on rocks exposed or shaded, but sometimes on dry banks or old logs, and occasionally on growing trees, in dense woods. It ranges from the Atlantic to the Pacific, extending northward to Nelson and Slave rivers, and probably to the Arctic Circle. Of very general distribution through-

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out Nova Scotia. (*Ball.*) Common near St. John, but rare in the northern counties of New Brunswick. (*Fowler.*) Grand Falls and Woodstock, N.B. (*Jack.*) Common in Quebec. (*Provancher, D'Urban, McCord, J. Bell, St. Cyr,* &c.) Abundant in most parts of Ontario. (*Macoun, Lawson, Billings, Logie, Burgess, Ami,* &c.) Plentiful in rocky parts of Manitoba. (*Macoun, Dawson, Burgess.*) Nelson River, Hudson Bay. (*Bell.*) Rocky Mountains. (*Macoun.*) The form known as var. *occidentale* is very abundant and is the common one in British Columbia, but the normal type also occurs. (*Macoun, Fletcher, Anderson.*) The var. *Cambricum* was found on rocks at Port Simpson B.C. (*Anderson.*)

(2977.) **P. falcatum,** Kellogg, Proc. Cal. Acad., i., 20. (1854.) Macoun & Burgess, Trans Roy. Soc. Can., ii., Sec. iv., 181.

P. glycyrrhiza, Eaton, Am. Journ. Sci. and Arts (July 1856), 138.

Confined to British Columbia, where it is found in the crevices of rocks and on trees. Abundant on rocks along the coast between Victoria and Esquimault Harbour, also at Goldstream, Vancouver Island; frequent in the hollows of living trees in the valley of the Fraser River, especially at Hastings and the mouth of Harrison River. (*Macoun.*) On rocks at Victoria. (*Anderson.*)

(2978.) **P. Scouleri,** Hook. & Grev., Ic. Fil., t. lvi. Hook. & Baker, Syn. Fil., 342. Macoun & Burgess, Trans. Roy. Soc. Can., ii., Sect. iv., 181.

P. carnosum, Kellogg, Proc. Cal. Acad., ii., 88.

Restricted to British Columbia and found usually on rocks exposed to the spray of the sea. Alberni, west side of Vancouver Island. (*Anderson.*) On exposed rocks, on small islands in Barclay Sound, Vancouver Island. (*Macoun.*) Near Cape Scott, and around the northern and north-western coast of Vancouver Island. (*Dawson.*)

741. GYMNOGRAMME, Desv., Berl. Magaz., V. 305. (GOLD-FERN.)

(2979.) **G. triangularis,** Kaulf., Enum. Fil., 73. Hook., Fl., Bor.-Am. ii., 259. Hook. & Baker, Syn. Fil., 384. Macoun & Burgess, Trans. Roy. Soc. Can., ii., Sect. iv., 182.

Found only in British Columbia, and rare even there. Crevices of

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rocks on the grassy slopes of Cedar Hill and Gordon Head, a few miles from Victoria, and at Goldstream and Departure Bay, near Nanaimo. (*Macoun.*) Mount Finlayson, Vancouver Island. (*Hill.*) Common about Victoria on bare hills under the shady sides of rocks. (*Anderson.*)

742. CHEILANTHES, Swartz, Syn. Fil., 126. (LIP-FERN.)

(2980.) **C. gracillima,** D. C. Eaton, Bot. Mex. Bound., 234. Hook. & Baker, Syn. Fil., 139. Macoun & Burgess, Trans. Roy. Soc. Can., ii., Sect. iv., 182.

C. vestita, Brackenridge, Fil. of U. S. Expl. Exped., 91.

A British Columbian species growing in dense beds on rocks. Mount Finlayson, Vancouver Island. (*Fletcher, Macoun.*) Fissures of dry rocks on Mount Finlayson at the head of, and on other hills on the east side of, Saanich Arm, near Victoria, V.I.; Harrison Lake. (*Anderson.*) Crevices of dry and exposed rocks a few miles above Spence's Bridge on the Thompson River. (*Macoun.*) At Pend d'Oreille River. (*Lyall.*)

(2981.) **C. lanuginosa,** Nutt., MS. in herb. Hook. Hook. & Baker, Syn. Fil., 139. Macoun & Burgess, Trans. Roy. Soc. Can., ii., Sect. iv., 183.

C. vestita, Hook., Sp. Fil., excl. syn., t. 108, B. Not of Swartz, and Willd.; Hook., Fl. Bor.-Am., ii., 264.

Found growing in matted masses, on exposed rocks, and limited in range to British Columbia and the eastern base of the Rocky Mountains. Abundant on ledges of rock, between Morley and Old Bow Fort, on the right bank of the Bow River, Alberta; crevices of rocks near Limestone Point on the North Thompson River, B.C. (*Macoun.*) Rattlesnake Bluff, Black Canyon, above Ashcroft, B.C. (*Hill.*) Alpine woods, Rocky Mountains. (*Drummond.*) New Caledonia, Northern British Columbia, and north-west coast. (*Douglas.*) Banff, Rocky Mountain Park. (*J. Smith.*)

743. PELLÆA, Link, Fil. Hort. Berol., 59. (CLIFF-BRAKE.)

(2982.) **P. gracilis,** Hook., Sp. Fil., ii., 138. Hook. & Baker, Syn. Fil., 145. Watt, Can. Nat., iv., 363. Macoun & Burgess, Trans. Roy. Soc. Can., ii., Sect. iv., 183.

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Pteris gracilis, Michx., Fl. Bor.-Am., ii., 262. Swartz, Syn. Fil., 99. Pursh, Fl. Am. Sept., ii., 668. Hook., Fl. Bor.-Am., ii., 264.
Allosorus gracilis, Presl, Tent. Pterid., 153. Gray, Man., Ed. 2, 591.
Allosorus Stelleri, Ruprecht, Distr. Crypt. Vasc. in Imp. Ross., 47. Lawson, Can. Nat., i., 272.
Pellæa Stelleri, Beddome, Lawson, Fern Fl. Can., 235.

Occurs in the crevices of rocks from Labrador to British Columbia, but is by no means a common species. Morris Rock, Restigouche, and Grand Falls, St. John, N.B. (*Fowler.*) Madawaska, N.B. (*Hay.*) Woodstock, N.B. (*Jack.*) Mingan Islands, Que. (*St. Cyr.*) On crystalline limestone, near the Lake of Three Mountains, River Rouge, Que. (*D'Urban.*) Cacouna, Que. (*J. W. Dawson.*) Rivière du Loup, Que. (*Thomas.*) Crevices of limestone rocks near Hemlock Lake, Ottawa, Ont. (*Fletcher.*) Lakefield, Ont. (*Mrs. Traill.*) On Guelph dolomites, Little Saugeen River, Durham, Grey Co., Ont. (*H. M. Ami.*) Crevices of wet rocks at the mouth of the Temiscami River, about twenty-five miles from the east end of Lake Mistassini, N. E. Ter.; summit of Mount Queest, Gold Range, B.C., altitude 7,000 feet. (*J. M. Macoun.*) Crevices of rocks near L'Anse à Fallon, Cape Rosier, Ste. Anne des Monts River, Gaspé, and Gunn River, Anticosti, Que.; limestone rocks along the River Moira near Belleville, Foster's Flats below the Whirlpool, Niagara Falls, rocks at Owen Sound, along the Kaministiquia River at and below the Kakabeka Falls, under the cliffs at Red Rock and Nepigon stations on the C. P. Ry., crevices of the Huronian slates seventeen miles from Michipicotin on the Magpie River, Ont.; Peace River Pass, Rocky Mountains, N. W. Ter.; crevices of rocks in rear of the C. P. Ry. water-tank at Kicking Horse Lake, Rocky Mountains, and at Mount Stephen, B.C. (*Macoun.*) Rocky hillsides, not common, Kootanie District, B.C. (*Anderson.*) Canada. (*Goldie*), to the Saskatchewan. (*Drummond*), in Hook. Fl. Bor.-Am.

(2983.) **P. atropurpurea,** Link, Fil. Hort. Berol., 59. Lawson, Can. Nat., i., 272. Watt, Can. Nat., iv., 363. Macoun & Burgess, Trans. Roy. Soc. Can., ii., Sect. iv., 184.

Pteris atropurpurea, Linn., Sp. Pl., 1534 Michx., Fl. Bor.-Am., ii., 261. Pursh, Fl. Am. Sept., ii., 668. Hook., Fl. Bor.-Am., ii., 264.

A widely distributed but very local fern, ranging from Ontario westward to British Columbia and northward to Great Bear Lake. Hamilton, Ont. (*Logie.*) Not rare in the crevices of limestone cliffs in the Dundas Ravine, Dundas, Ont. (*Burgess.*) Limestone rocks, Elora, Ont. (*McPherson.*) Crevices of rocks at the Whirlpool and Foster's Flats, Niagara Falls, Ont.; common at various places on rocks

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around Owen Sound and Colpoy's Bay, Ont.; rare in crevices of limestone rocks on the mountains near Kananaskis Station, Rocky Mountains, on the C. P. Ry., and on limestone cliffs, Clearwater River, north of Methy Portage, Lat. 57°, N. W. Ter.; canyon, near Buffalo Head Mountain, Rocky Mountains; crevices of dry rocks between Spence's Bridge and Câche Creek, B.C. (*Macoun.*) Hillsides on broken rocks, not common, Kootanie District, B.C. (*Anderson.*) Canada to Bear Lake and the Rocky Mountains. (*Richardson, Drummond.*) Mountains between Nicola and Kamloops, B.C. (*Dawson.*) Banff, Rocky Mountain Park. (*J. Smith.*)

(2984.) **P. densa,** Hook., Sp. Fil., ii., 150. Hook. & Baker, Syn. Fil., 149. Macoun & Burgess, Trans. Roy. Soc. Can., ii., sect. iv., 185.

A rock species, confined so far as known to the provinces of Quebec and British Columbia, where it is rare. Found by Prof. Allen on Mount Albert, Shickshock Mountains, Gaspé, Que., in 1881, growing exposed to the sun on the steep walls of ravines, at 2000 to 3000 feet elevation. (*Eaton.*) Abundant on cliffs along the Fraser River above Yale and within the Cascade Mountains, notably at Chinaman's Bluff; on rocks, Sicamous, Shuswap Lake; and summit of Mount Finlayson, Vancouver Island, B.C. (*Macoun.*) Mount Finlayson, Vancouver Island, B.C. (*Anderson.*)

744. CRYPTOGRAMME, R. Br., APP. Frank. Narr. (ROCK-BRAKE.)

(2985.) **C. acrostichoides,** R. Br., appendix to Franklin's First Journey, 767. Hook., Fl. Bor.-Am., ii., 264. Lawson, Can. Nat., i., 273. Watt, Can. Nat., iv., 363. Macoun & Burgess, Trans. Roy. Soc. Can., ii., sect. iv., 185.

C. crispa, forma *Americana,* Hook., Sp. Fil., ii., 130.
Allosorus acrostichoides, Spreng., Syst., 66. Gray, Man., 660.
C. crispa, var. *acrostichoides,* Lawson, Fern Fl. Can., 236.

Is found, forming dense tufts, among rocks and in their crevices, from Lake Huron westward to British Columbia, and stretching northward to within the Arctic Circle. McLeod's Harbor, Manitoulin Island, Ont. (*J. Bell.*) Cumberland House to Great Bear Lake, N. W. Ter. (*Richardson.*) Between Echimamish River and Oxford House, and around Cross Lake and on Nelson River near Hudson Bay, Keewatin. (*R. Bell.*) Common from Lake Winnipeg to the "Height of Land,"

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towards the east, N. W. Ter. (*J. M. Macoun.*) Rocks along the Arctic coast from Mackenzie River to Baffin Bay. (*Hooker.*) Stony places in the Rocky Mountains, but rare, to the sources of the Columbia River, B.C. (*Drummond*), thence to the Grand Rapids of the Columbia. (*Douglas.*) Kicking Horse Pass, Rocky Mountains, Selkirk Mountains, common in the Cascade and Gold ranges, along the Fraser River at Agassiz, and common on Vancouver Island, B.C. (*Macoun.*) Wigwam River, Kootanie Valley, Rocky Mountains. (*Dawson.*) Yale, B.C. (*Fletcher.*) Common at Victoria, B.C., among rocks on bare hills. (*Anderson.*)

745. PTERIS, Linn., Gen. Pl., No. 1174., (BRAKE OR BRACKEN.)

(2986.) **P. aquilina,** Linn., Sp. Pl., 1533. Michx., Fl. Bor.-Am., ii., 262. Hook., Fl. Bor.-Am., ii., 263. Provancher, Fl. Can., 715. Lawson, Can. Nat., i., 270. Watt, Can. Nat., iv., 363. Macoun & Burgess, Trans. Roy. Soc. Can., ii., sect. iv., 186.

Allosorus aquilinus, Presl, Tent Pterid., 153.

Is common, growing usually on sand or sandy loam, from the Atlantic to the Pacific. Very common in Nova Scotia. (*McKay.*) Growing everywhere in New Brunswick. (*Fowler.*) Prince Edward Island. (*Bain.*) Jupiter River, Anticosti, Que. (*Macoun.*) Common everywhere in Quebec. (*McCord, St. Cyr.*) Common at Lake Mistassini, and down the Rupert River to James Bay, N. E. Ter. (*J. M. Macoun.*) Common in Ontario and in parts of Manitoba. (*Macoun, Burgess,* &c.) Saskatchewan plains, N. W. Ter., and Rocky Mountains. (*Macoun.*)

Var. **lanuginosa,** Bong.; Hook., Fl. Bor.-Am., ii., 263. Macoun & Burgess, Trans. Roy. Soc. Can., ii., sect. iv., 187.

P. lanuginosa, Bory, in Willd., Sp. Pl., v., 403.

The common form on Vancouver Island and the mainland of British Columbia, where it is known to extend eastward at least as far as the Columbia River at Donald. (*Fletcher, Macoun.*) It is characterized by the silky-pubescent under surface of the fronds.

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746. ADIANTUM, Linn., Gen. Pl., No. 1180. (MAIDENHAIR.)

(2987.) **A. pedatum,** Linn., Sp. Pl., 1557. Swartz, Syn. Fil., 121. Michx., Fl. Bor.-Am., ii., 263. Pursh, Fl. Am. Sept., ii., 670. Hook., Fl. Bor.-Am., ii., 264. Provancher, Fl. Can., 714. Lawson, Can. Nat., i., 270. Watt, Can. Nat., iv., 363. Macoun & Burgess, Trans. Roy. Soc. Can., ii., sect. iv., 187.

A. boreale, Presl, Tent. Pterid., 158.

Is usually found in rich, damp woods, and outside of Ontario is very local in its distribution. Newport, Hants Co., N.S. (*Ball.*) Archibald's Mill, Upper Musquodoboit, Halifax Co., N.S. (*Jack.*) Upper Restigouche and Upper St. John; Keswick Ridge, York Co., N.B. (*Fowler.*) Andover, Victoria Co., N.B. (*Hay.*) Moose Mountain, Carleton Co., N.B. (*Bailey.*) Quebec, Que. (*Sheppard.*) St. Joachim and Isle St. Paul, Montreal, Que. (*Provancher.*) Levis; Cap Rouge; and Ste. Rose, Laval Co., Que. (*St. Cyr.*) River Rouge, Que. (*D'Urban.*) Very common throughout Ontario. (*Lawson, Macoun, Burgess,* &c.) On the plateau of Mount Albert, Shickshock Mountains, Gaspé, Que.; Vancouver Island, Yale, and other places in British Columbia. (*Macoun.*) Plentiful about Victoria, B.C. (*Fletcher, Anderson.*) Kootanie Lake, B.C. (*J. Anderson.*) Queen Charlotte Islands, B.C. (*Dawson.*)

Var. **rangiferinum,** Burgess, Trans. Roy. Soc. Can., iv., Sect. iv., 11.

A form with longer stalked pinnules, cleft, on the upper side, into narrow, toothed lobes. At present known only in one locality, viz., shaded rocks overhanging the water, Goldstream, at the base of Mount Finlayson, near Victoria, B.C. (*Anderson.*) Will probably be found to occur elsewhere on Vancouver Island.

747. LOMARIA, Willd. (DEER-FERN.)

(2988.) **L. spicant,** Desv., Mag. d. Gesellsch. Naturforsch. Freunde zu Berlin, v., 325. Hook. & Baker, Syn. Fil., 178. Macoun & Burgess, Trans. Roy. Soc. Can., ii., sect. iv., 188. Burgess, Trans. Roy. Soc. Can., iv., sect. iv., 12.

Blechnum boreale, Swartz, Schrad. Journ., ii., 75. Syn. Fil., 115 Pursh, Fl. Am. Sept., ii., 669. Hook., Fl. Bor.-Am., ii., 263.

Is confined to the coast of British Columbia west of the Coast Range,

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where, however, it is abundant in rich, cool woods. Nootka, Vancouver Island. (*Mertens.*) Common near Victoria and along the coast of the mainland. (*Anderson.*) New Westminster. (*Fletcher.*) Drew's Harbor and Queen Charlotte Islands. (*Dawson.*) Observatory Inlet. (*Scouler.*) Pitt River. (*Hill.*) Vancouver City. (*Fowler.*) Very abundant in damp woods in many parts of Vancouver Island, and in the thick woods in the Fraser Valley near the coast. (*Macoun.*)

748. WOODWARDIA, Smith, Acta. Taur., V., 411.
(CHAIN-FERN.)

(2989.) **W. Virginica,** Smith, Mém. Acad. Turin, v., 412. Swartz, Syn. Fil., 117. Pursh, Fl. Am. Sept., ii., 670. Lawson, Can. Nat., i., 278. Macoun & Burgess, Trans. Roy. Soc. Can., ii., sect. iv., 189.

W. Banisteriana, Michx., Fl. Bor.-Am., ii., 263. Swartz, Syn. Fil., 117.
W. thelypterioides, Pursh, Fl. Am. Sept., ii., 670.

Is rather rare in swamps east of Lake Huron. North-West Arm and Dartmouth, Halifax, N.S. (*Ball.*) Roadside between Caledonia and Liverpool, Queen's Co., and between Liverpool and Jordan River, Shelbourne Co., N.S. (*Jack.*) Near Gaspé Basin, Que. (*Eden.*) Near Heck's Mills, ten miles from Prescott, Augusta Township, Ont. (*Billings.*) Peat swamps of the Mer Bleu, near Ottawa, Ont. (*Fletcher.*) Along the Canada Atlantic Railway, near Eastman's Springs, Russell Co., very abundant five miles north of Colborne Village, and common in marshes at west end of Gull Lake, Addington Co., Ont. (*Macoun.*) Near Millgrove, Wentworth Co., Ont. (*Logie.*) Mossy bog surrounding a lake on Lake Island, Lake Joseph, Muskoka, Ont. (*Burgess.*) Swampy ground on the shore of Georgian Bay, twenty-five miles north of Penetanguishene, Ont. (*Alexander.*)

749. ASPLENIUM, Linn., Gen. Pl., No. 1178.
(SPLEENWORT.)

(2990.) **A. viride,** Hudson, Fl. Anglica, ed. i., 385. Swartz, Syn. Fil., 80. Hook., Fl. Bor.-Am., ii., 262. Lawson, Can. Nat., i., 275. Goode, Can. Nat., ix, 300. Macoun & Burgess, Trans. Roy. Soc. Can., ii., sect. iv., 190.

A. Trichomanes, Linn., Sp. Pl., 1540.

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Found in the crevices of shaded rocks, from New Brunswick to British Columbia, but rare. Tattagouche Falls, Gloucester Co., and Green Head, St. John Co., N.B. (*Fowler.*) Becoming common about St. John, N.B., in moist shady clefts of limestone rocks. (*Hay.*) Near Tadousac, and at the Falls of Rivière du Loup, Que. (*Watt.*) Clefts of shaded rocks at the mouth of Temiscami River, twenty-five miles from the east end of Lake Mistassini, N. E. Ter. (*J. M. Macoun.*) In a deep gorge on the road from Gaspé Basin to Fox River, and near Grand Etang, on sea cliffs at Mount Louis and at the Falls of Ste. Anne des Monts River, and base of Mount Albert, Que.; between Owen Sound and Sydenham Falls, Ont., and also on both sides of the falls; abundant on debris under limestone cliffs within the Bow River Pass, and on a limestone mountain in Peace River Pass, Rocky Mountains. (*Macoun.*) Amongst broken rocks at Port Simpson, B.C. (*Anderson.*) Moist shady rocks, Rocky Mountains. (*Drummond.*)

(2991.) **A. Trichomanes,** Linn., Sp. Pl., 1540 (in part). Michx., Fl. Bor.-Am., ii., 264. Hook., Fl. Bor.-Am., ii., 262. Swartz, Syn. Fil., 80. Lawson, Can. Nat., i., 274. Provancher, Fl. Can., 715. Watt, Can. Nat., iv., 363. Macoun & Burgess, Trans. Roy. Soc. Can., ii., Sect. iv., 191.

A. melanocaulon, Willd., Enum., 1072: Sp. Pl., v., 332. Pursh, Fl. Am. Sept., ii., 666.

Of pretty general distribution, in the crevices of moist shaded rocks, from the Atlantic to the Pacific. Hartley Falls, Pirate Harbor, Strait of Canso, and on Gold River near Chester, Lunenburg, N.S. (*Ball.*) The "Lookout," Cape Blomidon, N.S. (*Lawson.*) Near Three-Mile House, Halifax, N.S. (*Sommers.*) Montreal, Que. (*Maclagan, St. Cyr.*) Chatham Township, Argenteuil Co., Que. (*McCord.*) Ottawa, Ont. (*Fletcher.*) Clefts of rocks, Jones' Falls, Leeds Co., and Kingston Mills, Frontenac Co., Ont. (*P.G. Scott.*) On Guelph dolomites, Little Saugeen River, Durham, Grey Co., Ont. (*H. M. Ami.*) Lake Medad, Halton Co., Ont. (*Logie.*) Rocks, just below the falls and near the Whirlpool, Niagara Falls, Ont. (*Burgess.*) East coast of Hudson Bay. (*R. Bell.*) Jupiter River, Island of Anticosti; on Mount Louis, and up the Ste. Anne des Monts River, Gaspé, Que.; Shannonville, near Belleville, Ont.; Red Rock, Lake Superior, and westward to the Lake of the Woods; Clearwater River, near Methy Portage, Lat. 57°, N. W. Ter.; along Peace River, within the Rocky Mountains, and in Bow River Pass, Rocky Mountains; crevices of rocks at Sicamous and Agassiz, B.C.; at Departure Bay, and on Mount Benson, Nanaimo, Vancouver

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Island. (*Macoun.*) Great Shuswap Lake and Cascade Mountains, near Yale, B.C. (*Dawson.*) Harrison Lake, Kootanie District, and on Mount Isonhailim, near the mouth of the Cowichan River, Vancouver Island, B.C. (*Anderson..*) Canada to the Saskatchewan. (*Richardson.*)

(2992.) **A. ebeneum,** Ait., Hort. Kew., ed. i., iii., 462. Hook., Fl. Bor.-Am., ii., 263. Swartz, Syn. Fil., 79. Provancher, Fl. Can., 716. Lawson, Can. Nat., i., 276. Macoun & Burgess, Trans. Roy. Soc. Can., ii., sect. iv., 192.

A. trichomanoides, Michx., Fl. Bor.-Am., ii., 265.
A platyneuron, Oakes in Lawson, Fern Fl. Can., 237.

Very rare, and chiefly confined to the Province of Ontario. Vandreuil, Que., near the border of Ontario. (*St. Cyr.*) Rocky woods, Brockville, Ont. (*Billings.*) In a thin layer of mould covering the rocks at Jones' Falls, Leeds Co., Ont. (*P. G. Scott.*) Crevices of Laurentian rocks a little to the north of Shannonville Station on the Grand Trunk Railway, nine miles east of Belleville, and Gibson Mountain, a mass of metamorphic rock, Prince Edward Co., four miles south of Belleville, Ont. (*Macoun.*) Point Abino, Lake Erie, Ont. (*Day.*)

(2993.) **A. angustifolium,** Michx., Fl. Bor.-Am., ii., 265. Swartz, Syn. Fil., 76. Pursh, Fl. Am. Sept., ii., 666. Lawson, Can. Nat., i., 275. Macoun & Burgess, Trans. Roy. Soc. Can., ii., sect. iv., 192.

Is limited in its distribution to Quebec and Ontario, where it is found in low, rich woods. Nun's Island, Montreal, Que. (*Parsons.*) Ste. Rose, Laval Co., Que. (*St. Cyr.*) Open woods, "The Mountain," Montreal, Que. (*McCord.*) Abundant in McKay's Woods, Ottawa; frequent in rich woods, Prince Edward Co., and in rich soil in low woods along Cold Creek, Brighton, Northumberland Co., Ont. (*Macoun.*) Low woods up the Don Valley, Toronto; cedar swamps and low rich woods, London, and low woods, Lucknow, Bruce Co., Ont. (*Burgess.*) Rich woods, Amherstburg, Ont. (*Maclagan.*)

(2994.) **A. thelypteroides,** Michx., Fl. Bor.-Am., ii., 264. Swartz, Syn. Fil., 82. Pursh, Fl. Am. Sept., ii., 667. Hook. & Baker, Syn. Fil., 226. Provancher, Fl. Can., 716. Lawson, Can. Nat., i., 276. Macoun & Burgess, Trans. Roy. Soc. Can., ii., sect. iv., 193.

A. acrostichoides, Swartz, Schrad. Journ., ii., 54.
Athyrium thelypteroides, Desv., Prodr., 266. Lawson, Fern Fl. Can., 238.

Rather scarce in the Maritime Provinces, but common in most sections of Ontario and Western Quebec. Occurs in rich woods, and is

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not known to range west of Lake Superior. Windsor, N.S. (*How.*) Halifax, N.S. (*Lindsay.*) Mount Dalhousie, N.S. (*McKay.*) Strait of Canso; Boylston, Guysborough Co.; and Rawdon, Hants Co.; N.S. (*Ball.*) Ravine at Whycocogmah, Cape Breton. (*Macoun & Burgess.*) Wentworth Station, Cumberland Co., and North Mountains, King's Co., N.S.; near Grand Falls and at Woodstock, N.B. (*Jack.*) Bass River, N.B. (*Fowler.*) Fredericton, N.B. (*Vroom.*) Salmon River, Victoria Co., N.B. (*Hay.*) Quebec, Que. (*Sheppard.*) Isle of Orleans and Ste. Rose, Laval Co., Que. (*St. Cyr.*) Montreal, Lennoxville, and in Argenteuil Co., Que. (*McCord.*) Richmond and Drummond Co's, Que. (*Bothwell.*) Very common in South-western Ontario. (*Macoun, Logie, Burgess,* &c.) Along the Canadian Pacific Railway, north of Lakes Huron and Superior, Ont. (*Fletcher.*) Current River, Lake Superior, Ont. (*Macoun.*)

(2995.) **A. Filix-fœmina,** Bernh., Schrad. N. Journ. Bot., ii., 26 and 48. Provancher, Fl. Can., 716. Macoun & Burgess, Trans. Roy. Soc. Can., ii., sect. iv., 194.

Athyrium Filix-fœmina, Roth, Tent. Fl. Germ., ii., 65. Hook., Fl. Bor.-Am., ii., 262. Lawson, Can. Nat., i., 277; Fern Fl. Can., 238. Watt, Can. Nat., iv., 363.
Nephrodium Filix-fœmina, Michx., Fl. Bor.-Am., ii., 268.
Nephrodium asplenoides, Michx., Fl. Bor.-Am., ii., 263.
Aspidium asplenoides, Swartz, Syn. Fil., 60. Pursh, Fl. Am. Sept., ii., 664.

A very variable species which grows in tufts in moist fields and woods. It is common in most parts of British America from the Atlantic to the Pacific. Quite common throughout Nova Scotia. (*Ball.*) A very common and variable fern in New Brunswick. (*Fowler.*) Abundant in Prince Edward Island. (*Bain.*) Very common in Quebec and Ontario. (*Lawson, McCord, Macoun, Burgess, St. Cyr,* &c.) Common in wooded parts of Manitoba and the North-West Territory, in the Rocky Mountains, and in British Columbia. (*Macoun.*) Throughout Canada to the Saskatchewan and alpine woods of the Rocky Mountains. (*Drummond.*)

Var. **Michauxii,** Mett., Asplenium, 199.

Aspidium angustum, Willd., Sp. Pl., V., 277.
Athyrium Filix-fœmina, Roth., var. *β.*, Hook., Fl. Bor.-Am., ii., 262.
Asplenium Filix-fœmina, var. *angustum,* D. C. Eaton, Ferns of N. Am., ii., 277. Macoun & Burgess, Trans. Roy. Soc. Can., ii., sect. iv., 195.

This is perhaps the most distinct of the many forms of this fern which have been described. It is less common than the type, but not

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extremely rare, especially in Ontario. Salt Mountain, Whycocogmah, N.S. (*Macoun, Burgess.*) Farmersville and Delta, Ont. (*Lawson.*) Ottawa, Ont. (*Fletcher.*) Belleville, Ont. (*Macoun.*) London, Ont. (*Burgess.*)

750. SCOLOPENDRIUM, Smith, Acta. Taur., v. 410. (HART'S-TONGUE.)

(2996.) **S. vulgare,** Smith, Mém. Acad. Turin, v., 421. Hook. & Baker, Syn. Fil., 246. Lawson, Can. Nat., i., 278. Macoun & Burgess, Trans. Roy. Soc. Can., ii., sect. iv., 195. Burgess, Trans. Roy. Soc. Can., iv., sect. iv., 12.

S. officinarum, Swartz, Schrad. Journ., ii., 61; Syn. Fil., 89. Pursh, Fl. Am. Sept., ii., 667.

One of the rarest of American ferns, and is found growing in tufts in wet shade on limestone rocks. Only three stations are known in Canada. Woodstock, N.B. (*Sutton, Jack.*) Abundant on limestone debris under the cliffs at Sydenham Falls and other localities around Owen Sound, Ont. (*Mrs. Roy.*) On Guelph dolomites, Little Sau- River, Durham, Grey Co., Ont. (*H. M. Ami.*) It is a very variable species and three of the forms, which have been known, respectively, as vars. *marginatum, ramosum,* and *multifidum,* were collected near Woodstock, N.B., by Mr. Jack.

751. CAMPTOSORUS, Link, Sp. Fil. Berol., 83. (WALKING-LEAF.)

(2997.) **C. rhizophyllus,** Link, Hort. Berol., ii., 69. Lawson, Can. Nat., i., 279. Macoun & Burgess, Trans. Roy. Soc. Can., ii., sect. iv., 196.

Asplenium rhizophyllum, Linn., Sp. Pl., 1536. Swartz, Syn. Fil., 74. Michx., Fl. Bor.-Am., ii., 264. Provancher, Fl. Can., 715.

Occurs on shaded, mossy, limestone rocks. Montreal Mountain, Que. (*Provancher.*) L'Abord à-Plouffe, rear of the Island of Montreal, Que. (*McCord.*) Isolated rocks in a shaded pasture, Hemmingford, Que. (*Goode.*) Limestone rocks west of Hull, and in a ravine near King's Mere, Chelsea, Que. (*Fletcher.*) Rocky woods, near Oxford Station, on the Ottawa and Prescott Ry., Ont. (*Billings.*) Crevices of limestone

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rocks at the railway bridge, Shannonville, and on boulders beyond the "Big Spring" on the Marmora Road, Hastings Co., Ont.; abundant on broken masses of rock at Foster's Flats, Niagara Falls, Ont.; plentiful at Owen Sound, Ont., on boulders and ledges under the cliffs. (*Macoun.*) Hamilton and Ancaster, Wentworth Co., and Lake Medad, Halton Co., Ont. (*Logie.*) On shaded, mossy masses of limestone fallen from the cliffs in "The Ravine," Dundas, and at Beamsville, Ont. (*Burgess.*) Canada (*Goldie*), to the Saskatchewan (*Drummond*), in Hook., Fl. Bor.-Am.

752. PHEGOPTERIS, Fée, Gen. Fil., 242.
(BEECH-FERN.)

(2998.) **P. polypodioides,** Fée, Gen. Fil., 243. Macoun & Burgess, Trans. Roy. Soc. Can., ii., sect. iv., 197.

Polypodium Phegopteris, Linn., Sp. Pl., 1550. Swartz, Syn. Fil., 40. Hook., Fl. Bor.-Am., ii., 258. Provancher, Fl. Can., 713. Lawson, Can. Nat., i., 269.

Polypodium connectile, Michx., Fl. Bor.-Am., ii., 271. Pursh, Fl. Am. Sept., ii., 659.

Phegopteris connectile, Watt, Can. Nat., iv., 363. Lawson, Fern Fl. Can., 247.

Occurs in damp, especially rocky woods, and on hillsides, and is commonest in the Eastern Provinces. Common and generally distributed throughout Nova Scotia. (*Ball.*) Common in New Brunswick. (*Fowler.*) Common in Quebec. (*D'Urban, Brunet, McCord, St. Cyr,* &c.) Very luxuriant on the Island of Anticosti and shore of the Lower St. Lawrence, Que.; woods, at Brackley Point, Prince Edward Island; abundant around Lake Superior, Ont.; rather scarce along Lake Manitoba and the Porcupine Mountains, Man.; near the line of the Canadian Pacific Ry. in the valley of Beaver Creek, Selkirk Mountains, and in the Gold Range at Griffin Lake, B.C., both on stumps and on rocks along mountain torrents. (*Macoun.*) Prescott, Grenville Co., and Osgoode Station, Russell Co., Ont. (*Billings.*) Ottawa, and along the C. P. Ry. north of Lakes Huron and Superior, Ont. (*Fletcher.*) Near the sources of the Columbia on Portage River, Rocky Mountains, Lat. 52°. (*Drummond.*) Shaded, rocky places, Port Simpson, B.C. (*Anderson.*)

(2999.) **P. hexagonoptera,** Fée, Gen. Fil., 243. Macoun & Burgess, Trans. Roy. Soc. Can., ii., sect. iv., 198.

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Polypodium hexagonopterum, Michx., Fl. Bor.-Am., ii., 271. Pursh, Fl. Am. Sept., ii., 659. Lawson, Can. Nat., i., 268. Hook. & Baker, Syn. Fil., 309.

Polypodium Phegopteris, var. *majus*, Hook., Fl. Bor.-Am., ii., 258.

This species is found in rich, open woods, and, in south-western Ontario, seems to take the place of *P. polypodioides*, from which species it is sometimes difficult to separate it. Quebec, Que. (*Sheppard.*) Nun's Island, Montreal, Que. (*Parsons.*) Rare in Miriwin's Woods, near Prescott, Ont. (*Billings.*) Rocky woods, near Campbellford, Northumberland Co., and in thickets at Port Stanley, Elgin Co., Ont. (*Macoun.*) Rich woods near the Waterworks Reservoir, Toronto, and at London, St. Thomas, and Windsor, Ont. (*Burgess.*) Chippewa, Ont. (*Maclagan.*) Parry Sound, Ont. (*Logie.*)

(3000.) **P. Dryopteris,** Fée, Gen. Fil., 243. Macoun & Burgess, Trans. Roy. Soc. Can., ii., sect. iv., 198.

Polypodium Dryopteris, Linn., Sp. Pl., 1555. Swartz, Syn. Fil., 41. Hook., Fl. Bor.-Am., ii., 259. Lawson, Can. Nat., i., 269. Provancher, Fl. Can., 713.

Polypodium calcareum, Pursh, Fl. Am. Sept., ii., 659 (not of Smith and Willdenow.)

Nephrodium, Dryopteris, Michx., Fl. Bor.-Am., ii., 270.

Common in rocky woodlands from Nova Scotia to British Columbia, and extending northward to the Arctic Circle. To be met with in most localities in Nova Scotia. (*Ball.*) Common in New Brunswick. (*Fowler.*) Common on Prince Edward Island, and along Lakes Manitoba and Winnipegoosis, and in the Riding, Duck, and Porcupine mountains, Man., also in the Rocky Mountains, British Columbia and Vancouver Island. (*Macoun.*) Abundant in Quebec. (*Maclagan, D'Urban, Provancher, St. Cyr*, &c.) Common in rocky parts of Ontario. (*Billings, Macoun, Burgess*, &c.) Along the C. P. Ry. north of Lakes Huron and Superior. (*Fletcher.*) At intervals from Lake Winnipeg to within fifty miles of Hudson Bay, and on Clearwater River, N. W. Ter. (*J. M. Macoun.*) Echimamish River to Oxford House, Keewatin. (*R. Bell.*) Rocky Mountains and Great Bear Lake, Lat. 66°. (*Hook.*, in Fl. Bor.-Am.) British Columbia. (*Dawson.*) Victoria and Port Simpson, B.C. (*Anderson.*)

Var. **Robertianum,** Dav., Suppl. Cat. Dav. Herb., 47.

P. calcarea, Fée, Gen. Fil., 243. Macoun & Burgess, Trans. Roy. Soc. Can., ii., sect. iv., 199.

Polypodium Robertianum, Hoff.; Moore, Nat. Pr. Brit. Ferns, t. vi. Lawson, Can. Nat., i., 270.

Polypodium Dryopteris, var. *calcareum*, Gr., Man., Ed. 2., 590.

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Is distinguished from the type by its glandular stalks and fronds. Abundant on ledges of limestone about two miles up the left bank of the Becscie River, Island of Anticosti, Que. (*Macoun.*) Not rare in low woods at the base of limestone cliffs, and in crevices of the cliffs themselves, at the mouth of the Temiscami River, Lake Mistassini, N. E. Ter. (*J. M. Macoun.*) Lake of the Woods, Man. (*Dawson.*) About one hundred miles north-east of Lake of the Woods, near Lonely Lake (Lac Seul), Ont. (*R. Bell.*)

(3001.) **P. alpestris,** Mett., Fil. Hort. Lips., 83. Macoun & Burgess, Trans. Roy. Soc. Can., ii., sect. iv., 200. Burgess, Trans. Roy. Soc. Can., iv., sect. iv., 13.

Polypodium alpestre, Hoppe; Spreng. Syst. Veg., iv., par. ii., 320. Hook. & Baker, Syn. Fil., 311.
Aspidium alpestre, Swartz, Syn. Fil., 421.
Athyrium alpestre, Nylander; Lawson, Fern Fl. Can., 238.

It has a strong general resemblance to *Asplenium Filix-fœmina,* from which, however, it is distinguishable by the absence of indusia. Cascade Mountains, B.C., about Lat. 49°. (*Lyall.*) In wet places, at an altitude of 7000 feet, on the slopes below the glacier along Bear Creek at the summit of the Selkirk Mountains, near the line of the C. P. Ry., and also abundant under the cliffs, at a height of 6000 feet, near the summit of the Gold Range north of Griffin Lake, B.C. (*Macoun.*)

753. ASPIDIUM, Swartz, Schrad. Journ., I. and II., St. 4 and 29. (SHIELD-FERN.)

(3002.) **A. Noveboracense,** Swartz, Syn. Fil., 55. Pursh, Fl. Am. Sept., ii., 661. Macoun & Burgess, Trans. Roy. Soc. Can., ii., sect. iv., 200.

Dryopteris Noveboracensis, Gr., Man., ed. i., 630.
Lastrea Noveboracensis, Presl, Tent. Pterid., 75. Lawson, Can. Nat., i., 284; Fern Fl. Can., 244.
Nephrodium thelypterioides, Michx., Fl. Bor.-Am., ii., 267.
Aspidium thelypteris, Hook., Fl. Bor.-Am., ii., 260, not of Swartz.
Aspidium thelypteris, var. *noveboracense,* Willd.; Provancher, Fl. Can., 718.
Polystichum Noveboracense, Watt, Can. Nat., iv., 363.

Found in grassy swamps, moist woods and thickets, and is most common in the Maritime Provinces, finding its western limit in Ontario. Common in swamps and moist places in Nova Scotia. (*Ball.*) Very

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common in New Brunswick. (*Fowler.*) Not rare in Prince Edward Island. (*Bain, Macoun.*) Quebec and Montreal, Que. (*Sheppard.*) Lèvis, Que. (*St. Cyr.*) Richmond and Drummond Co's, Que. (*Bothwell.*) Mount Belœil, Que. (*Maclagan.*) Ottawa, Ont. (*Fletcher.*) Prescott, Ont. (*Billings.*) Kingston and Lakefield, Ont. (*Mrs. Traill.*) Abundant in pine woods, Seymour, Northumberland Co., Ont. (*Macoun.*) Low woods and thickets, Toronto, London, Blenheim, Windsor, and Port Cockburn, Ont. (*Burgess.*) Owen Sound, Ont. (*Mrs. Roy.*) Gore Bay, Manitoulin Island, Ont. (*J. Bell.*)

(3003.) **A. Thelypteris,** Swartz, Schrad. Journ., ii., 40; Syn. Fil., 50. Pursh, Fl. Am. Sept., ii., 661. Provancher, Fl. Can., 718. Macoun & Burgess, Trans. Roy. Soc. Can., ii., sect. iv., 201.

Polystichum Thelypteris, Roth, Fl. Germ., iii., 77. Watt, Can. Nat., iv., 363.
Nephrodium Thelypteris, Desv., Mém. Soc. Linn., vi., 257. Hook. & Baker, Syn. Fil., 271.
Lastrea Thelypteris, Presl, Tent. Pterid., 76. Lawson, Can. Nat., i., 283; Fern Fl. Can., 244.

Common in cedar, tamarack and other swamps, from Nova Scotia westward to Lake Winnipeg. Quite abundant in swamps throughout Nova Scotia. (*Ball.*) Rather common in wet marshy places in New Brunswick. (*Fowler.*) Frequent in Prince Edward Island. (*Bain, Macoun.*) Common in Quebec. (*McCord, Provancher, Maclagan, Parsons, St. Cyr,* &c.) Abundant in Eastern and Central Ontario. (*Macoun, Fletcher, Billings, Logie, Burgess,* &c.) Muskoka and Parry Sound, Ont. (*Burgess.*) Near Red River Settlement, Man. (*McTavish.*)

(3004.) **A. Oreopteris,** Swartz, Schrad. Journ., ii., 35; Syn. Fil., 50. Burgess, Trans. Roy. Soc. Can., iv., sect. iv., 14.

A. montanum, Milde, Fil. Eur. et Atlant., 115.
Lastrea Oreopteris, Presl., Tent. Pterid., 76.
Lastrea montana, Moore; Lawson, Fern Fl. Can., 243.

Occurs in patches on wet ground on mountain slopes and in rocky ravines, and is limited in Canada, so far as known, to British Columbia. At an altitude of 6,500 feet on Avalanche Mountains, at the summit of the Canadian Pacific Railway pass through the Selkirk Range. (*Macoun.*) Port Simpson, opposite the southern extremity of Alaska. (*Anderson.*)

(3005.) **A. cristatum,** Swartz, Schrad. Journ., ii., 37; Syn. Fil., 52. Pursh, Fl. Am. Sept., ii., 661. Hook., Fl. Bor.-Am., ii., 261.

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Provancher, Fl. Can., 718. Macoun & Burgess, Trans. Roy. Soc. Can., ii., sect. iv., 202.

Polystichum cristatum, Roth, Tent. Fl. Germ., iii., 84. Watt, Can. Nat., iv., 363.

Nephrodium cristatum, Michx., Fl. Bor.-Am., ii., 269. Hook. & Baker, Syn. Fil., 273.

Lastrea cristata, Presl, Tent. Pterid., 77. Lawson, Can. Nat., i., 282; Fern Fl. Can., 241.

Usually found in low woods, ranging from the Atlantic to the Rocky Mountains, and northward as far as Great Slave Lake. Common in Nova Scotia. (*Ball, McKay.*) Scarce in New Brunswick, the only recorded stations being: Bass River, Green Head. (*Fowler, Hay*), and Andover and Upper Gaspereaux. (*Wetmore.*) Abundant in beech woods, Prince Edward Island. (*Bain.*) Not uncommon in Quebec. (*D'Urban, Provancher, McCord, St. Cyr*, &c.) Local but common in Ontario. (*Macoun, Maclagan, Billings, Burgess, Fletcher*, &c.) Porcupine Mountains, Man. (*Macoun.*) Saskatchewan, N.W.T. (*Richardson.*) Lake Winnipeg and Slave River, N.W.T. (*Eaton.*)

Var. **Clintonianum,** D. C. Eaton, Gr. Man., ed. v., 665. Macoun & Burgess, Trans. Roy. Soc. Can., ii., sect. iv., 203.

Distinguished chiefly by its greater size and more numerous pinnæ and segments. Ste. Rose, Laval Co., Que. (*St. Cyr.*) Chatham Township, Argenteuil Co., Que. (*McCord.*) Border of woods, Alva Farm, Knowlton, Que., and Dow's Swamp, Ottawa, Ont. (*Fletcher.*) Black ash swamps, Belleville; also Flat Rock Portage, Lake Nepigon, Ont. (*Macoun.*) Swamps, London, Ont. (*Burgess.*) Owen Sound, Ont. (*Mrs. Roy.*)

(3006.) **A. Goldieanum,** Hook., Edinb. Phil. Journ., vi., 333; Fl. Bor.-Am., ii., 260. Provancher, Fl. Can., 718. Macoun & Burgess, Trans. Roy. Soc. Can., ii., sect. iv., 203.

Nephrodium Goldieanum, Hook. & Grev., Ic. Fil., t. cii. Hook & Baker, Syn. Fil., 272.

Lastrea Goldieana, Presl, Tent. Pterid., 76. Lawson, Can. Nat., i., 282; Fern Fl. Can., 240.

Aspidium Filix-mas, Pursh, Fl. Am. Sept., ii., 662.

Found in low rich woods and rocky ravines, but is nowhere common in our territory. Near Woodstock, N.B. (*Jack.*) Ste. Rose, Laval Co., Que. (*St. Cyr.*) Richmond and Drummond Co's, Que. (*Bothwell.*) "The Mountain," Montreal, Que. (*McCord.*) Abundant among gneiss

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rocks near Hamilton's Farm, River Rouge, Que. (*D'Urban.*) Nun's Island, Montreal, Que. (*Parsons.*) Ottawa, Ont. (*Fletcher.*) Farmersville, and banks of river westward of Brockville, Ont., in crevices of Laurentian rocks. (*Lawson.*) Woods, Belleville, Castleton, and Brighton, Ont. (*Macoun.*) Woodstock, Ont. (*Millman.*) Rich woods, London, Ont. (*Burgess.*) Amherstburgh, Ont. (*Maclagan.*)

(3007.) **A. Filix-mas,** Swartz, Schrad. Journ., ii., 38; Syn. Fil., 55. Goode, Can. Nat, ix., 297. Macoun & Burgess, Trans. Roy. Soc. Can., ii., sect. iv., 204.

Polystichum Filix-mas, Roth, Fl. Germ., iii., 82. Watt, Can. Nat., iv., 363.
Nephrodium Filix-mas, Richard, Desv., Mém. Soc. Linn, vi., 60. Hook. & Baker, Syn. Fil., 272 (exclusive of vars. γ and δ.)
Lastrea Filix-mas, Presl, Tent. Pterid., 76. Lawson, Can. Nat. i., 282; Fern Fl. Can., 241.

Occurs in rocky woods and on open, rocky hillsides. Whycocogmah, Cape Breton, N.S. (*Lindsay.*) Aspey Bay, Lake Ainslie, and Cape Mabou Mountain, Cape Breton, N.S. (*McKay.*) Keswick Ridge, N.B. (*Moser.*) Daley's Wood, Richmond, N.B. (*Hay.*) Abundant and very luxuriant along the Gaspé coast, at Fox River, Que.; plentiful on the line of the C. P. Ry. on the lower slopes of Mount Macdonald, near Bear Creek, summit of the Selkirk Range, B.C. (*Macoun.*) Among loose rocks under the limestone cliffs at the rear of Royston Park, Owen Sound, Ont., and about ten miles up the Georgian Bay, under the same range of cliffs. (*Mrs. Roy.*) British Columbia. (*Lyall.*)

(3008.) **A. rigidum,** Swartz, Schrad. Journ., ii., 37; Syn. Fil., 53. Macoun & Burgess, Trans. Roy. Soc. Can., ii., sect. iv., 205.

Nephrodium rigidum, Desv., Ann. Linn., vi., 261.
Lastrea rigida, Presl, Tent. Pterid., 77. Lawson, Fern Fl. Can., 243.

Found growing in tufts among rocks on mountain sides. Mount Finlayson, near Victoria, Vancouver Island, B.C. (*Cowley, Anderson.*) The southern Pacific coast form, var. *argutum,* presents, according to Prof. Eaton, no points of specific difference from ours, which is typical *rigidum,* except that its fronds are larger and broader.

(3009.) **A. marginale,** Swartz, Syn. Fil., 50; Pursh, Fl. Am. Sept., ii., 662; Hook., Fl. Bor.-Am., ii., 260; Provancher, Fl. Can. 718. Macoun & Burgess, Trans. Roy. Soc. Can., ii., sect. iv., 205.

Nephrodium marginale, Michx., Fl. Bor.-Am., ii., 267. Hook. & Baker, Syn. Fil., 273.
Lastrea marginalis, Presl, Tent. Pterid., 77. Lawson, Can. Nat., i., 281; Fern Fl. Can., 242.
Polystichum marginale, Watt, Can. Nat., iv., 363.

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This species especially favours rocky, wooded ravines and hillsides, occurring abundantly from the Maritime Provinces to the Lake of the Woods, thence, but very sparingly, to the Rocky Mountains. Generally distributed throughout Nova Scotia. (*Ball.*) Rather common in New Brunswick. (*Fowler.*) Not rare in Prince Edward Island. (*Bain.*) Common in Quebec. (*Provancher, McCord, Sheppard, St. Cyr*, &c.) Very common in Ontario. (*Lawson, Macoun, Billings, Burgess*, &c.) Abundant in the Muskoka and Parry Sound districts of Ontario, and along the Dawson Road, Man. (*Burgess.*) Split Rock Portage, on the Nepigon River, Ont., and in Peace River Pass, Rocky Mountains, Lat. 56°. (*Macoun.*) The Saskatchewan. (*Drummond.*)

(3010.) **A. spinulosum,** Swartz, Schrad. Journ., ii., 38; Syn. Fil., 54. Hook., Fl. Bor.-Am., ii., 261. Provancher, Fl. Can., 719. Macoun & Burgess, Trans. Roy. Soc. Can., ii., sect. iv., 206.

Nephrodium spinulosum, Desv., Ann. Linn., vi., 261. Hook. & Baker, Syn. Fil., 275.

Lastrea spinulosa, Presl, Tent. Pterid., 76. Lawson, Fern Fl. Can., 242.

A partially evergreen fern finding its favorite home in thick, especially damp, woods. It is frequent in the wooded districts of all our provinces and ranges northward to Alaska.

Var. **intermedium,** D. C. Eaton, Gray, Manual, Ed. v., 665. Macoun & Burgess, Trans. Roy. Soc. Can., ii., sect. iv., 207.

Aspidium intermedium, Willd. J, Sp. Pl., v., 262. Pursh, Fl. Am. Sept., ii., 663.

Lastrea intermedia, Presl, Tent. Pterid., 77.

Aspidium Americanum, Davenport, Am. Nat., xii., 714; Catal., 29.

This form, which prefers drier woods, has the same range as the type, but is most abundant in Eastern and Central Ontario.

Var. **dilatatum,** Hook., Brit. Fl. ed. I., 444. Macoun & Burgess, Trans. Roy. Soc. Can., ii., sect. iv., 207.

Aspidium dilatatum, Swartz, Syn. Fil., 420.

Lastrea dilatata, Presl., Tent. Pterid., 77. Lawson, Can. Nat., i., 281.

Lastrea spinulosa, Presl, var. *dilatata*, Lawson, Fern Fl. Can., 240.

Like the type, it extends from the Atlantic, through the Rocky Mountains, to the Pacific, prevailing most extensively in the Eastern Provinces and British Columbia, where, in places, it forms almost the whole undergrowth. Not very common in Ontario except about Lake Superior.

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(3011.) **A. Boottii,** Tuckerman, Hovey's Mag. of Hort. and Bot., ix., 145. Macoun & Burgess, Trans. Roy. Soc. Can., ii., sect. iv., 208.

A. spinulosum, var. *Boottii*, Gray, Man., Ed. ii., 598.
A. cristatum, var. *uliginosum*, Milde, Fil. Eur. et Atlant., 131.
Lastrea Boottii, Lawson, Fern Fl. Can., 241.

Our recorded stations for this fern, which is found in swamps and wet places in woods and thickets, are very few, but careful search would probably prove it to be less rare. Bellahill, thirteen miles from Halifax, and near Sackville Church, two and a half miles further up the old Windsor Road, N.S. (*Jack.*) Low forest glade, Kemptville, Ont. (*Porter.*) Swamp near the Grand Trunk Railway Station at Belleville, Ont., growing in the immediate vicinity of *A. cristatum*, var. *Clintonianum* and *A. spinulosum*. (*Macoun.*) Hamilton, Ont. (*Logie.*) With *A. cristatum*, in a cedar swamp, London, Ont. (*Burgess.*)

(3012.) **A. fragrans,** Swartz, Syn. Fil., 51. Hook., Fl. Bor.-Am., ii, 261. Macoun & Burgess, Trans. Roy. Soc. Can., ii., sect. iv., 208.

Polystichum fragrans, Ledeb., Fl. Ross., iv., 514. Watt, Can. Nat., iv., 363.
Nephrodium fragrans, Rich., App. Frankl. Journ., 753. Hook. & Baker, Syn. Fil., 275.
Lastrea fragrans, Presl, Tent. Pterid., 76. Lawson, Can. Nat., i., 283; Fern Fl. Can., 243.

Found in the crevices of shaded cliffs, and on mossy rocks, especially near cascades, from Nova Scotia to the Rocky Mountains and northward to the Arctic Circle. Hartley Water-fall, Pirate Harbour, Strait of Canso, N.S. (*Ball.*) Clefts of rocks at the Railway Tunnel, Restigouche, N.B. (*Fowler.*) Dalhousie, N.B. (*Fletcher.*) Saguenay River, Que. (*Watt.*) Hemmingford, Que. (*Goode.*) Perpendicular rocks at the Falls of Ste. Anne des Monts River, and along the Telegraph Road, Gaspé, Que.; Pic Island, and along cliffs on the shore of Thunder Bay above that island, McKay's Mountain, Thunder Cape, and Red Rock Station, C. P. Ry., north shore of Lake Superior, Ont.; very abundant on trap rocks on the upper part of Nepigon River and all around Lake Nepigon, being the common fern in that region; Dawson Road, Ont.; Peace River Pass in the Rocky Mountains, above Hudson's Hope in the Canyon, Lat 56° 12′. (*Macoun.*) Crevices of rocks on Moon River, Muskoka, Ont. (*Burgess.*) East coast of Hudson Bay, Cape Chudleigh and Cape Prince of Wales, Hudson Strait. (*R. Bell.*) Rocks about Chipeywan, Athabasca District. (*Traill.*) Great Bear Lake, N. W. Ter. (*Hooker.*) The Saskatchewan to the Arctic Sea and Islands. (*Richardson, Parry.*) Francis River, N.W.T. (*Dawson.*)

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(3013.) **A. Lonchitis,** Swartz, Schrad. Journ., ii., 30; Syn. Fil. 43. Hook., Fl. Bor.-Am., ii., 261. Hook. & Baker, Syn. Fil., 250. Macoun & Burgess, Trans. Roy. Soc. Can., ii., sect. iv., 209. Burgess, Trans. Roy. Soc. Can., iv., sect. iv., 15.

Polystichum Lonchitis, Roth, Tent. Fl. Germ., iii., 71. Lawson, Can. Nat., i., 285; Fern Fl. Can., 239. Watt, Can. Nat., iv., 363.

Grows in tufts in shaded, rocky places, usually on the debris of calcareous rocks, and, except in the Rocky Mountains, is a rare and local species, as far as known. In considerable abundance near Aspey Bay, Cape Breton, N.S. (*McKay.*) Found sparingly at Foster's Flats, below the Whirlpool, Niagara Falls, Ont.; common on rocky ground, especially under cliffs, throughout the Bruce Peninsula, and around Owen Sound, Ont.; on the mountain slopes of Bow River Pass, and in Peace River Pass, Lat. 56°, Rocky Mountains, N. W. Ter.; on the upper slopes of Cathedral Mountain at Kicking Horse Lake, on the snowslides near the summit of the Selkirk Mountains, in the Cascade Mountains above Yale, and on the Gold Range north of Griffin Lake, B.C. (*Macoun.*) Kootanie Pass, Rocky Mountains, Lat. 49°, at 6,500 feet elevation. (*Dawson.*) Rocky Mountains, Lat. 52°—56°. (*Drummond.*) On rocks along the Arctic coast from the Mackenzie River to Baffin Bay. (*Hook.* Arct. Pl.)

(3014.) **A. acrostichoides,** Swartz, Syn. Fil., 44. Pursh, Fl. Am. Sept., ii., 661. Hook., Fl. Bor.-Am., ii., 261. Hook. & Baker, Syn. Fil., 250. Provancher, Fl. Can., 718. Macoun & Burgess, Trans. Roy. Soc. Can., ii., sect. iv., 210. Burgess, Trans. Roy. Soc. Can., iv., sect. iv., 16.

Nephrodium acrostichoides, Michx., Fl. Bor.-Am., ii., 267.
Polystichum acrostichoides, Schott, Gen. Fil. Lawson, Can. Nat., i., 285; Fern Fl. Can., 239. Watt, Can. Nat., iv., 363.
Polystichum munitum, Presl, Tent. Pterid., 83. Lawson, Fern Fl. Can., 239.

An evergreen, tufted species, found in woods and on wooded hillsides, especially in rocky soil. It occurs from Nova Scotia to the Bruce Peninsula of Ontario, which seems to be about its western limit in Canada. Quite common in Nova Scotia, (*Ball.*) Common near St. John; rare near Molus River, Kent Co., N.B. (*Fowler.*) Woodstock, N.B. (*Jack.*) Upper Tobique and Kennebeccasis, N.B. (*Hay.*) Common at Salmon River, N.B. (*Wetmore.*) Not rare in Prince Edward Island. (*Bain.*) Common in Quebec. (*Provancher, D'Urban, Maclagan, Bothwell, Sheppard, St. Cyr,* &c.) Very abundant in Eastern, Central, and South-western Ontario. (*Macoun, Lawson, Logie, Fletcher, Burgess,*

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&c.) The form known as var. *incisum* has been reported from Montreal, Que. (*McCord.*) Owen Sound, Ont. (*Macoun.*) London and Hamilton, Ont. (*Burgess.*)

(3015.) **A. munitum,** Katif., Enum. Fil., 236. Hook., Fl. Bor.-Am., ii., 261. Macoun & Burgess, Trans. Roy. Soc. Can., ii., sect. iv., 211.

An evergreen species, growing in woods and among rocks, confined with us to British Columbia. North-West America. (*Menzies.*) Nootka, Vancouver Island. (*Mertens.*) Very abundant around Victoria, and common in rocky woods up the Fraser River to far above Yale, also on mountain slopes at Griffin Lake, Eagle River. (*Macoun.*) Damp thickets, New Westminster. (*Fletcher.*) The forms which have been described as var. *inciso-serratum* and var. *imbricans* have been found about Victoria, the former by Prof. Macoun, the latter by Mr. Fletcher.

(3016.) **A. aculeatum,** Swartz, Schrad. Journ., ii., 37; Syn. Fil., 53. Hook. & Baker, Syn. Fil., 252. Macoun & Burgess, Trans. Roy. Soc. Can., ii., sect. iv., 211. Burgess, Trans. Roy. Soc. Can., iv., sect. iv., 16.

A. lobatum, Smith, Fl. Brit., 1123. Swartz, Syn. Fil., 53.
A. aculeatum, var. *lobatum*, Kunze, Bot. Zeit. (1848), 356. Eaton, Ferns of N. Am., ii., 124.

Our only known station for typical *A. aculeatum* is Port Simpson, Northern B. C., where it was collected, in moist rocky places, by Mr. Anderson, in 1885. Further research in that district will probably prove it to be less rare.

Var. **Braunii,** Doell (Koch), Rhein. Fl., 27. Macoun & Burgess, Trans. Roy. Soc. Can., ii., sect., iv., 212.

Aspidium Braunii, Spenner, Fl. Frib., i., 9.
A. aculeatum, Pursh, Fl. Am. Sept., ii., 662. Hook., Fl. Bor.-Am., ii., 261. Provancher, Fl. Can., 719.
Polystichum angulare, Presl, var. *Braunii*, Lawson, Can. Nat., i., 285.
Polystichum aculeatum, Moore, var. *Braunii*, Watt, Can. Nat., iv., 363.
Polystichum Braunii, Lawson, Fern Fl. Can., 239.

Found in the crevices of moist, shaded rocks, and in rocky woods, its range being restricted to the Provinces of Nova Scotia, New Brunswick, Quebec, and British Columbia. Rare and local in Nova Scotia; occurring at Marble Mountain, Bras d'Or Lake; Sherman's Mountain, Port Mulgrave, Strait of Canso; Ehler's Waterfall, near Guysborough; and

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hills above Mabou, Cape Breton. (*Ball.*) Lake Ainslie, Cape Breton. (*McKay.*) Near Baddeck, and at River Inhabitans, Cape Breton. (*Jack.*) Pirate Harbour, Strait of Canso, N.S. (*Macoun & Burgess.*) Cape Blomidon, N.S. (*Lawson.*) Sugar Loaf, Restigouche; and Odell's Grove, Fredericton, N.B. (*Fowler.*) St. Francis River, Andover, N.B. (*Hay.*) Plentiful in rocky woods along the Gaspé Coast, Que., generally near the shore and often within the spray of the waves. (*Macoun.*) Quebec, Que. (*Sheppard.*) Temiscouata, Que. (*Thomas.*) Isle of Orleans, Que. (*St. Cyr.*) Abundant on gneiss rocks and damp logs, valley of the River Rouge, Argenteuil Co., Que. (*D'Urban.*) Portage and sources of the Columbia River, west side of the Rocky Mountains, Lat. 52°. (*Drummond.*) Nootka, Vancouver Island, B.C. (*Hænke.*)

Var. **scopulinum,** D. C. Eaton, Ferns of N.A., ii., 125. Macoun & Burgess, Trans. Roy. Soc. Can., ii., sect. iv., 212.

A form with narrow fronds, much resembling those of *A. mohrioides*, found growing in the crevices of rocks. In Canada only known to exist on Mount Albert, Shickshock Mountains, Gaspé, Que., where it was found, at an altitude of about 4000 feet, by Professor Allen, in July 1881, and by Professor Macoun, in August 1882. Having been found in Washington Territory, U.S., it is to be looked for in Southern British Columbia.

754. CYSTOPTERIS, Bernh., Schrad. Neu. Journ. Bot., i., part ii., 526. (BLADDER-FERN.)

(3017.) **C. fragilis,** Bernh., l.c., part i., 27. Hook., Fl. Bor.-Am., ii., 260. Lawson, Can. Nat., i., 286. Provancher, Fl. Can., 719. Goode, Can. Nat., ix., 298. Macoun & Burgess, Trans. Roy. Soc. Can., ii., sect. iv., 213.

Cystea fragilis, Smith, Engl. Fl., iv., 285. Watt, Can. Nat., iv., 363.
Nephrodium tenue, Michx., Fl. Bor.-Am., ii., 269.
Aspidium tenue, Swartz, Syn. Fil., 58. Pursh, Fl. Am., Sept., ii., 665.

A common and very variable species, found in crevices of moist shaded rocks, in rich woods, and sometimes in open wet places. It is one of the most universally distributed of our ferns, appearing in almost every part of the Dominion, growing even on the open prairie in moist places near rocks. It is so variable that the same roots will at different times, or even the same time, produce fronds that might be referred to different ones of the many, so-called, varieties.

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(3018.) **C. bulbifera,** Bernh., l.c., part i., 27. Hook. Fl. Bor.-Am., ii., 260 Provancher, Fl. Can., 719. Lawson, Can. Nat., i., 287. Goode, Can. Nat., ix., 299. Macoun & Burgess, Trans. Roy. Soc. Can., ii., sect. iv., 214.

Polypodium bulbiferum, Linn., Sp. Pl., 1553.
Aspidium bulbiferum, Swartz, Schrad. Journ. Bot., ii, 41; Syn. Fil., 59. Pursh, Fl. Am. Sept., ii., 663.
Cystea bulbifera, Smith, Engl. Fl., iv. 286. Watt, Can. Nat., iv., 363.
Nephrodium bulbiferum, Michx., Fl. Bor.-Am., ii., 268.
Aspidium atomarium, Muhl., MS. Pursh, Fl. Am. Sept. ii., 665.

A slender, tufted species, occurring in wet places among rocks, or in low rich woods. It is found in Nova Scotia and New Brunswick, though not common, and extends westward to the Lake of the Woods. Hartley's Waterfall, Pirate Harbour, Strait of Canso, N.S. (*Ball.*) Aspey Bay, Cape Breton. (*McKay.*) Newport, Hants Co., N.S.; and Grand Falls, N.B. (*Jack.*) Very abundant about the Lower St. John, Coldbrook, N.B. (*Hay.*) Restigouche and St. John, N.B. (*Fowler.*) On damp limestone rocks up Jupiter River, Island of Anticosti, Que. (*Macoun.*) Common in Quebec. (*Provancher, D'Urban, Bell, Maclagan, McCord, St. Cyr,* &c.) Very abundant throughout Ontario, as far west as the Bruce Peninsula. (*Lawson, Billings, Macoun, Logie, Burgess,* &c.) Manitoulin Islands, Ont. (*J. Bell.*) Lake of the Woods. (*Dawson.*) North-west Angle, Lake of the Woods. (*Burgess.*)

(3019.) **C. montana,** Bernh., l.c., part ii., 26. Hook., Fl. Bor.-Am., ii., 260. Macoun & Burgess, Trans. Roy. Soc. Can., ii., sect. iv., 215. Burgess, Trans. Roy. Soc. Can. iv., sect. iv., 17.

Aspidium montanum, Swartz, Schrad. Journ. Bot., ii., 42; Syn. Fil., 61.
Cystea montana, Lam. Watt, Can. Nat. iv., 363.

One of our rarest ferns, finding its home in low, dense woods, generally along creeks. Labrador. (*Butler.*) In a deep ravine beside a brook, on the northern face of Mount Albert, Shickshock Mountains, Gaspé, Que.; in a cedar swamp, near the silver mine north of Current River, Lake Superior, Ont.; abundant in Kicking-Horse Pass, Rocky Mountains. (*Macoun.*) Plentiful along a spring creek, running through spruce woods, about ten miles from the H. B. Co.'s post on Lake Mistissini, N. E. Ter. (*J. M. Macoun.*) By streams, in shady alpine woods, in the Rocky Mountains, Lat 52°-56°. (*Drummond.*)

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755. ONOCLEA, Linn., Gen. Pl., No. 1170. (ONOCLEA.)

(3020.) **O. sensibilis,** Linn., Sp. Pl., 1517. Michx., Fl. Bor.-Am., ii., 272. Swartz, Syn. Fil., 110. Pursh, Fl. Am., Sept., ii., 665. Hook., Fl. Bor.-Am., ii., 262. Provancher, Fl. Can., 717. Lawson, Can. Nat., i., 274. Watt, Can. Nat., iv., 363. Macoun & Burgess, Trans. Roy. Soc. Can., ii., sect. iv., 215.

A very common fern throughout Canada, in wet, generally shaded, places, as far west as the head of Lake Winnipegoosis and the Saskatchewan.

The plant described as var. *obtusilobata* by Doctor Torrey in the Flora of New York, vol. ii., p. 499 (*Onoclea obtusilobata*, Schk., Krypt. Gew., 95. Pursh, Fl. Am. Sept., ii., 665) is only a form in which some, or all, of the sterile fronds are contracted and partially fruitful. It is recorded from but few localities but is probably of much more frequent occurrence. Richibucto, N.B. (*Fowler.*) Havelock, King's Co., N.B. (*Brittain.*) Prince Edward Island. (*Bain.*) Wet meadow, one mile north of Murray Town-Hall, Northumberland Co., Ont. (*Macoun.*) Ottawa, Ont. (*Fletcher.*) Saugeen, Ont. (*P. J. Scott.*)

(3021.) **O. Struthiopteris,** Hoff., Fl. Deutschld., 11. Swartz, Syn. Fil., 111. Watt, Can. Nat., iv., 363. Macoun & Burgess, Trans. Roy. Soc. Can., ii., sect. iv., 216.

O. nodulosa, Schk., Krypt. Gew., 97. (Perhaps also of Michx., Fl. Bor.-Am., ii., 272.)

Struthiopteris Germanica, Willd., Enum., 1071. Hook., Fl. Bor.-Am., ii., 262. Gray, Man., ed. v., 667. Provancher, Fl. Can., 717.

Struthiopteris Pennsylvanica, Willd., Sp. Pl., v., 289. Pursh, Fl. Am. Sept., ii. 666.

Struthiopteris Germanica, var. *Pennsylvanica*, Lawson, Can. Nat. i., 273; Fern Fl. Can., 231.

A tall, showy species, found in low, open or wooded, especially alluvial, ground. Its range is from Nova Scotia to near the Pacific Coast in the valley of the Fraser River in British Columbia, but it is most common east of Lake Huron. Canada to the Saskatchewan. (*Richardson.*). About forty miles north of Michipicotin on the Magpie River, and about five miles up the Kaministiquia River, Lake Superior, Ont.; along the Assiniboine River, from Winnipeg to the Souris River, Man.; common along the C. P. Ry., east of Agassiz Station, and along Eagle River in the Gold Range, B.C., 1889. (*Macoun.*) North-west Angle, Lake of the Woods. (*Burgess.*)

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756. WOODSIA, R. Br., Trans. Linn. Soc. Lond., xi., 170. (WOODSIA.)

(3022.) **W. glabella,** R. Br., App. Frankl. Journ. 754. Hook., Fl. Bor.-Am., ii., 259. Lawson, Can. Nat., i., 289. Watt, Can. Nat., iv., 363. Goode, Can. Nat., ix., 298. Macoun & Burgess, Trans. Roy. Soc. Can., ii., sect. iv., 217 Burgess, Trans. Roy. Soc. Can., iv., sect. iv., 17.

W. alpina, var. *glabella*, Eaton, Can. Nat., ii., 89.

A very delicate little species found in tufts on moist, shaded rocks. It has a wide range, extending from New Brunswick westward to the Rocky Mountains, and northward to the Arctic Circle, but is rare and local. Restigouche River, N.B. (*J. Brittain.*) Grand Falls, N.B. (*Jack.*) Limestone rocks, twelve miles up Jupiter River, and under cliffs at Ellis Bay, Anticosti, Que.; frequent in crevices of rocks along the Gaspé coast, Ste. Anne des Monts River, and Rivière du Loup, Que.; ledges of rock, Kakabeka Falls, Kaministiquia River, Red Rock, near the C. P. Ry. station, and on trap rocks up the Nepigon River, Lake Superior, Ont.; limestone rocks, Pine Portage, Clearwater River, below Methy Portage, N. W. Ter., Lat 57°, and Bow River Pass, Rocky Mountains. (*Macoun.*) Saguenay River and Montmorenci Falls, Que. (*Watt.*) Isle of Orleans, Que. (*St. Cyr.*) Great Bear Lake (the original station) N. W. Ter. (*Richardson.*) On rocks along the Arctic coast, from Mackenzie River to Baffin Bay. (*Hook., Arct. Pl.*)

(3023.) **W. hyperborea,** R. Br., Trans. Linn. Soc. xi., 173. Hook., Fl. Bor.-Am., ii., 259. Hook. & Baker, Syn. Fil., 46. Provancher, Fl. Can., 720. Watt, Can. Nat., iv., 363. Macoun & Burgess, Trans. Roy. Soc. Can., ii., sect. iv., 218.

W. alpina, S. F. Gray, Nat. Arang. Brit. Pl., ii., 17. Lawson, Trans. Bot. Soc. Ed., viii., 108, and Can. Nat., i., 289.

This plant is closely allied to *W. glabella*, and, like it, is found on moist, mossy rocks. It occurs very locally from New Brunswick to the Saskatchewan, and northward to the Arctic Circle. "The Tunnel," Restigouche, N.B. (*Fowler.*) Aroostook Falls, Victoria Co., N.B. (*Hay, Wetmore.*) Dartmouth River, Gaspé, Que., twenty miles from its mouth. (*J. Bell.*) Perpendicular faces of cliffs near Cape Rosier, Gaspé; on rocks twenty miles up the Ste. Anne des Monts River, and at the falls of the same river at the base of Mount

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Albert, Que.; on mountain masses along the north shore of Lake Superior west of Nepigon Bay, on cliffs of Jack Fish Island, Lake Nepigon, and on ledges of rock between the Hudson Bay Co.'s post and Lake Superior at Michipicotin, Ont. (*Macoun.*) On a moist, mossy bank, within reach of the spray, near the falls on the Rivière du Loup, and on mossy rocks in a ravine at Temiscouata, Que. (*Watt.*) Ile du Havre, Mingan, Que. (*St. Cyr.*) Norway House, Lake Winnipeg. (*Richardson.*) Rocks about Fort Chipweyan, Athabasca. (*W. G. Traill.*) Nottingham Island, Hudson Strait. (*R. Bell.*) On rocks along the Arctic coast, from the Mackenzie River to Baffin Bay. (*Hook., Arct. Pl.*) Greenland. (*Rosenvinge.*)

(3024.) **W. Ilvensis,** R. Br., Trans. Linn. Soc., xi., 273. Pursh, Fl. Am. Sept., ii., 660. Hook., Fl. Bor.-Am., ii., 259. Provancher, Fl. Can., 720. Lawson, Can. Nat., i., 288. Hook. & Baker, Syn. Fil., 46. Watt, Can. Nat., iv., 363. Macoun & Burgess, Trans. Roy. Soc. Can., ii., sect. iv., 219.

Nephrodium rufidulum, Michx., Fl. Bor.-Am., ii., 269.
Aspidium rufidulum, Swartz, Syn. Fil., 58. Pursh, Fl. Am. Sept., ii., 665.

A small, dull-green, tufted species occurring on exposed rocks, from Nova Scotia to the Rocky Mountains, and northward beyond the Arctic Circle. Not common in Nova Scotia. (*McKay.*) Salt Mountain, Whycocogmah, N.S. (*Lindsay.*) Gold River, near Chester, Lunenburg Co., N.S. (*Ball.*) East side of Lake Thomas, Halifax Co., N.S., and Hay's Falls, near Woodstock, N.B. (*Jack.*) Near Truro, N.S. (*Campbell.*) The "Look Out," Cape Blomidon, N.S. (*Macoun & Burgess.*) Sugar Loaf, Restigouche, and mouth of Upsalquitch, N.B. (*Fowler.*) Keswick, Nashwaaksis, St. Stephen, Green Head, and St. John, N.B. (*Vroom.*) Very abundant in many parts of Quebec and Ontario. (*Provancher, St. Cyr, D'Urban, Lawson, Macoun, Fletcher, Logie, Burgess,* &c.) Very abundant and luxuriant west and northwest of Lake Superior. (*Macoun.*) Echimamish River to Oxford House, and Nelson River, near Hudson Bay. (*R. Bell.*) Common up Berens River to the Height of Land. (*J. M. Macoun.*) Rocks about Chipeywan, Athabasca. (*W. G. Traill.*) Canada to Hudson Bay, Bear Lake, and the Rocky Mountains. (*Richardson, Drummond.*) Rocks along the Arctic coast from Mackenzie River to Baffin Bay, also in Arctic Greenland and along the east and northeast coast. (*Hook., Arct. Pl.*)

(3025.) **W. obtusa,** Torrey, Cat. Pl. in Geol. Rept. of N.Y. (1840.) Fl. of N. Y., ii., p. 500. Lawson, Can. Nat., i., 289. Hook. &

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Baker, Syn. Fil., 48. Macoun & Burgess, Trans. Roy. Soc. Can., ii., sect. iv., 220. Burgess, Trans. Roy. Soc. Can., iv., sect. iv., 180.

Aspidium obtusum, Willd., Sp. Pl., v., 254. Pursh, Fl. Am. Sept., ii., 662. *Physematium obtusum*, Hook., Fl. Bor.-Am., ii., 259.

This fern, which is found on rocks and stony hillsides, is one of our rarest species, only three stations being recorded for it, and these strangely far apart. In the gorge through which Dr. Hamilton's Road winds up to the summit of North Mountain, near Canning, N.S. (*Jack.*) Amongst loose rocks at Port Simpson, Northern B.C. (*Anderson.*) West side of the Rocky Mountains, near the sources of the Columbia. (*Drummond.*)

(3026.) **W. scopulina,** D. C. Eaton, Can. Nat., ii., 91. Hook. & Baker, Syn. Fil., ed. 2, 48. Macoun & Burgess, Trans. Roy. Soc. Can., ii., sect. iv., 220. Burgess, Trans. Roy. Soc. Can., iv., sect. iv., 18.

Found growing in dense masses on rocks and in their crevices, chiefly in shade, and confined with us, so far as known, to the Rocky Mountains, and British Columbia. Rocky Mountains; and Elk River, Kootanie Valley, B.C. (*Dawson.*) Among loose rocks on mountain sides at Lytton and Victoria, B.C. (*Fletcher.*) Along the Fraser and Thompson rivers, B.C., from Yale to Sicamous on Shuswap Lake, and on the mountains at these places; abundant in Kicking Horse Pass, Rocky Mountains. (*Macoun.*) Specimens thickly glandular on the upper as well as the lower surface have been collected by Mr. Anderson on Mount Finlayson, near Victoria, B.C.

(3027.) **W. Oregana,** D. C. Eaton, Can. Nat., ii., 90. Hook. & Baker, Syn. Fil., ed. 2, 48. Watt, Can. Nat., iv., 363. Macoun & Burgess, Trans. Roy. Soc. Can., ii., sect. iv., 221. Burgess, Trans. Roy. Soc. Can., iv., sect. iv., 18.

A delicate little species occurring in dense patches in the crevices of rocks, often where exposed to the sun, and ranging from Lake Nepigon westward into British Columbia and northward to Lake Athabaska. Blackwater River, Lake Nepigon, Ont.; Fort Chipeywan, Athabasca; and Peace River Pass, Rocky Mountains; along the Fraser and Thompson rivers, B.C., from Yale to Spence's Bridge; on Blackwater River, along the Telegraph Trail, and at Fort St. James, Northern B.C. (*Macoun.*) Exposed rocks, Kamloops, B.C. (*Fletcher.*)

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757. DICKSONIA, L'Her., Sert. Ang., 30. (DICKSONIA.)

(3028.) **D. pilosiuscula,** Willd., Enum. Pl. Hort. Berol., 1076. Pursh, Fl. Am. Sept., ii., 671. Hook., Fl. Bor.-Am., ii., 264. Macoun & Burgess, Trans. Roy. Soc. Can., ii., sect. iv., 222.

Aspidium punctilobum, Willd., Sp. Pl., v., 279. Pursh, Fl. Am. Sept., ii., 664.

Dicksonia punctilobula, Kunze, Sill. Journ. (1848), 87. Gray, Man., 669. Provancher, Fl. Can., 720.

Nephrodium punctilobulum, Michx., Fl. Bor.-Am., ii., 268.

Dennstædtia punctilobula, Moore, Index Fil., p. xcvii., 307. Lawson, Can. Nat., i., 287; Fern Fl. Can., 233.

Found in stony pastures, open woods, and on rocky hillsides, from the Atlantic westward to Georgian Bay. Very common in Nova Scotia. (*Ball.*) Abundant in New Brunswick. (*Fowler.*) Very abundant by roadsides at Brackley Point, Prince Edward Island; common in extreme eastern Quebec; frequent along the roadside between Flinton and the Addington Road, Addington Co., and in low, rich woods a little east of Norwood, Peterboro Co., Ont. (*Macoun.*) Lévis and Sillery, Que. (*St. Cyr.*) Lennoxville and Waterloo, Que. (*Sheppard.*) Richmond and Drummond Co's, Que. (*Bothwell.*) Montreal, Que. (*Maclagan.*) Plentiful in Harrington Township and on Hamilton's Farm, River Rouge, Argenteuil Co., Que. (*D'Urban.*) Abundant in Stewart's Bush, Ottawa, and at Casselman, Ont. (*Fletcher.*) Near Prescott, Ont. (*Billings.*) Near Kingston, Ont. (*J. Bell.*) Parry Sound, Georgian Bay, Ont. (*Logie.*)

758. SCHIZÆA, Smith, Act. Taur. v., 419. (SCHIZÆA.)

(3029.) **S. pusilla,** Pursh, Fl. Am. Sept., ii., 657. Hook., Fl. Bor.-Am., ii., 265. Hook. & Baker, Syn. Fil., 428. Lawson, Can. Nat., i., 291. Macoun & Burgess, Trans. Roy. Soc. Can., ii., sect. iv., 222.

This peculiar, sedge-like, little species is one of the rarest of ferns. Only one station is known in Canada, but it is recorded by De la Pylaie as occurring in a peat bog near St. Pierre, Newfoundland. Found among the rhizomes of *Osmunda regalis* on the shore of Grand Lake, twenty-three miles from Halifax, N.S., in August, 1879, by Miss Elizabeth G. Knight (now Mrs. Britton), but not since detected.

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759. OSMUNDA, Linn., Gen. Pl., No. 1172. (FLOWERING-FERN.)

(3030.) **O. regalis,** Linn., Sp. Pl., 1521. Swartz, Syn. Fil., 160. Michx., Fl. Bor.-Am., ii., 273. Hook. & Baker, Syn. Fil., 427. Provancher, Fl. Can., 721. Watt, Can. Nat., iv., 364. Macoun & Burgess, Trans. Roy. Soc. Can., ii., sect. iv., 223.

O. spectabilis, Willd., Sp. Pl., v., 98. Pursh, Fl. Am. Sept., ii., 658. Hook., Fl. Bor.-Am., ii., 265.

O. regalis, var. *spectabilis,* Milde, Fil. Eur. et Atlant., 178. Lawson, Can. Nat., i., 290 ; Fern. Fl. Can., 247.

A tall-growing species of very common occurrence in wet places in most parts of the eastern half of our territory, though rare toward its western limit, which is the Saskatchewan. Observed north of Lake Superior at Round Lake, on the line of the Canadian Pacific Railway, twelve miles east of the Pic River, and at Current River, Thunder Bay, Ont. (*Macoun.*) Abundant around Lake Mistassini, N. E. Ter.; on Muskeg Island, Lake Winnipeg. (*J. M. Macoun.*) Through Canada westward to the Saskatchewan. (*Eaton.*)

(3031.) **O. Claytoniana,** Linn., Sp. Pl., 1521. Swartz, Syn. Fil., 160. Pursh, Fl. Am. Sept., ii., 657. Hook. & Baker, Syn. Fil., 426. Lawson, Can. Nat., i., 291. Watt, Can. Nat., iv., 364. Macoun & Burgess, Trans. Roy. Soc. Can., ii., sect. iv., 224.

O. interrupta, Michx., Fl. Bor.-Am., ii., 273. Swartz, Syn. Fil., 160. Pursh, Fl. Am. Sept., ii., 657. Hook., Fl. Bor.-Am., ii., 265. Provancher, Fl. Can., 721.

A handsome fern found growing in tufts in low grounds, and common throughout Canada from Newfoundland and Nova Scotia to Lake Superior, probably finding its western limit in Manitoba. Not uncommon around Lake Nepigon and Thunder Bay, Ont. (*Macoun.*) Very abundant among boulders all around Lake Mistassini, N. E. Ter. (*J. M. Macoun.*) Collected by Bourgeau at Sturgeon Lake, some hundred miles north-west of Lake Superior, and, according to Milde, on Lake Winnipeg.

(3032.) **O. cinnamomea,** Linn., Sp. Pl., 1522. Swartz, Syn. Fil., 160. Michx., Fl. Bor.-Am., ii., 273. Pursh, Fl. Am. Sept., ii., 657. Hook., Fl. Bor.-Am., ii., 265. Hook. & Baker, Syn. Fil., 426. Provancher, Fl. Can., 721. Lawson, Can. Nat., i., 290. Macoun & Burgess, Trans. Roy. Soc. Can., ii., sect. iv., 225.

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A common species in low ground throughout Nova Scotia, New Brunswick, Prince Edward Island, Quebec and Ontario, as far west as Georgian Bay, which is probably its limit, though Prof. Lawson records it as found at Two Heart River, Lake Superior, by Dr. R. Bell.

The form known as var. *frondosa*, Gr. is an occasional, accidental condition, in which the lower part of the frond is sterile, the apex fertile. Windsor, N.S. (*How.*) The Waterworks, Halifax Co., N.S. (*Jack.*) Molus River, Kent Co., N.B. (*Fowler.*) In swamps at Belleville, Hastings Co., and at Bismark, Elgin Co., Ont. (*Macoun.*)

CXXI. LYCOPODIACEÆ. Club-Moss Family.

760. LYCOPODIUM, Linn.

(3033.) **L. Selago,** Linn.; Hook. Fl. II., 266.

Not uncommon on mountains and northward. From Hudson Bay to the Rocky Mountains, and to the extreme Arctic Shores and islands. (*Richardson, Drummond.*) Labrador. (*Dr. Morrison.*) Cape Chudleigh, Digge's Island, and Nottingham Island, Hudson Strait. (*R. Bell.*) Summit of Mount Albert, altitude 4000 feet, and along the Gaspé Coast, Q. (*Macoun.*) Among grass on Carleton Heights, N.B. (*Fowler's Cat.*) On high exposed rocks, 10 miles south of Otter Head, and north of it, Lake Superior. On the Rocky Mountains at Kicking-Horse Lake, and on the Selkirks at Mount Macdonald; also on the Gold Range north of Griffin Lake, B.C. (*Macoun.*) Kootanie District, B.C. (*J. R. Anderson.*) Sitka, Ounalaskka, and Kotzebue Sound. (*Rothr. Alask.*) Cumberland Islands, Arctic Sea. (*Walker.*) West-side of the Rocky Mountains near the sources of the Columbia. (*Douglas.*) Greenland. (*Ryder's Expedition.*)

Var. *β*. Hook. Fl. II., 266.

Tall and widely forking, leaves long pointed and often squarrose. Observatory Inlet, Millbank Sound to Stikine. (*Hook. Fl.*) Summit of Mount Benson, near Nanaimo, Vancouver Island; altitude 3000 feet. (*Macoun.*)

(3034.) **L. lucidulum,** Michx.; Hook. Fl. II., 266.

Common in swamps and wet woods throughout Canada. West coast of Newfoundland. (*J. Bell.*) Windsor, Halifax and Pictou, N.S.

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(*Sommer's Cat.*) Common in Kent Co., N.B. (*Fowler's Cat.*) Brookville, N.B. (*Hay.*) North Mountain, Annapolis, N.S.; woods, Bescie River, Anticosti; abundant on Prince Edward Island at Brackley Point; coast of Gaspé and Mount Albert, Q. (*Macoun.*) Common in woods at Ottawa. (*Fletcher Fl. Ott.*) Low woods, London and Parry Sound, Ont. (*Burgess.*) Very common through northern Ontario and westward through the forest country to the Rocky Mountains at Laggan, and in the Gold Range north of Griffin Lake, B.C.; also on Mount Mark, near Qualicum, Vancouver Island. (*Macoun.*)

(3035.) **L. inundatum,** Linn.; Hook. Fl. II., 267.

In swamps and on wet sodden ground, generally eastward. Near Bedford; Northwest Arm and Point Pleasant, near Halifax; also at Pictou, N.S. (*Sommer's Cat.*) Bass River and several places in Kent Co.; not rare at Salmon River, N.B. (*Fowler's Cat.*) Black River, Lake Verd, and North Pond near East Point, Prince Edward Island; also in a peat bog, Hastings Road, North Hastings, Ont. (*Macoun.*) Wet sandy shore, Port Colborne, Lake Joseph, Muskoka, Ont. (*Burgess.*) North Shore of Lake Superior. (*Agassiz.*)

Var. **Bigelovii,** Tuckerm.; Gray Man., ed. V., 673.

Only found in the Maritime Provinces. Bogs, North Sydney, and Louisburg, Cape Breton. (*Macoun & Burgess.*) Grand Lake, Halifax Co., N.S. (*McKay.*) Bass River, Kent Co., N.B. Specimens received from Prof. J. Fowler. (*Macoun.*)

(3036.) **L. obscurum,** Linn.; Gray, Man., ed. VI., 696.

L. dendroideum, Michx.; Hook. Fl. II., 266.

Quite common in the pine forests of Ontario. Brigus, Newfoundland. (*R. Bell.*) West coast of Newfoundland. (*J. Bell.*) Windsor, Halifax, and Pictou, N.S. (*Sommer's Cat.*) Rather common at Bass River, N.B. (*Fowler's Cat.*) North Sydney and Baddeck, Cape Breton; Brackley Point, Prince Edward Island; and common along the Gaspé Coast, Q. (*Macoun.*) Salmon River, N.B. (*Wetmore.*) Woods, Lake Mistassini, N. E. Ter.; and Lake Winnipeg. (*J. M. Macoun.*) Woods, around Ottawa. (*Fletcher Fl. Ott.*) Sandy woods, Komoka, Ont. (*Burgess.*) Common in the central counties of Ontario, and westward around Lake Superior. (*Macoun.*) Canada to the Saskatchewan and Hudson Bay. (*Drummond.*) Northwest coast of America. (*Menzies.*) Sitka. (*Rothr. Alask.*)

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(3037.) **L. annotinum,** Linn., Hook. Fl. II., 266.

Very common in all cool woods and on mountains across the continent. Brigus, Newfoundland. (*R. Bell.*) Windsor, Dartmouth, Halifax, and Pictou, N.S. (*Sommer's Cat.*) Common in dry woods, N.B. (*Fowler's Cat.*) Tobique River, N.B. (*Hay.*) Salmon River, N.B. (*Wetmore.*) Pirate's Cove, Canso, N.S.; Brackley Point and Cantire, Prince Edward Island, and woods at Salt Lake, Anticosti; also Gaspé Coast, Q. (*Macoun.*) Vicinity of Ottawa. (*Fletcher Fl. Ott.*) Low woods, Lake of the Woods, and Sault Ste. Marie, Ont. (*Burgess.*) Lake Mistassini, N. E. Ter., and Loon Strait, Lake Winnipeg. (*J. M. Macoun.*) Common in northern Ontario and westward to the Rocky Mountains, from Castle Mountain westward to the Selkirk Summit at Glacier; and westward to the Gold Range and the mountains, on Vancouver Island. (*Macoun.*) Crow Nest Pass, Rocky Mountains, and Iltasyouco River, B.C. (*Dawson.*) Cariboo Mountains, B.C.; altitude 6000 feet. (*Bowman.*) Killisnow Island, Alaska. (*Meehen.*) Sitka, Ounalaskka, and Kotzebue Sound. (*Rothr. Alask.*) Canada to Slave Lake; Observatory Inlet to Millbank Sound. (*Hook. Fl.*)

Var. **alpestre,** Hartm.

Summit of Mount Albert, Gaspé, Q.; altitude 4000 feet. (*Macoun.*) Crevices of rocks, Nain, coast of Labrador. (*R. Bell.*)

Var. **pungens,** Spreng.

This form has longer and sharper leaves than the preceding. Summit of Mount Arrowsmith, Vancouver Island; altitude 5700 feet. (*Macoun.*)

(3038.) **L. sabinæfolium,** (Willd.) Hook. Fl. II., 266.

L. complanatum, L. var. *sabinæfolium,* Gray Man., ed. V., 674.

Nearly all our specimens are referred here as we have little of the *L. alpinum* that has the flattened stem of the European form. We believe Hooker correctly characterized this form when he said:—"*foliis undique imbricatis nunc quadrifariis æqualibus erectis, tereti-subulatis,*" and this surely cannot be said of *L. alpinum* which has flattened stems and unequal leaves. Newfoundland. (*Cormack.*) Stanhope Road, Prince Edward Island; Summit of Mount Albert, Gaspé, Q. (*Macoun.*) Table Top Mountain, Gaspé, Q. (*Porter.*) Lake Mistassini, N. E. Ter. (*J. M. Macoun.*) Crane Lake, Muskoka, Ont. (*Burgess.*) Magpie River, north of Lake Superior and westward;

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Kicking Horse Lake, Rocky Mountains; Selkirk Mountains around the Summit Pass; on Portage La Loche, Lat 57°; on the summits of Mount Mark and Mount Arrowsmith, Vancouver Island. (*Macoun.*) Banks of the Saskatchewan. (*Hooker Fl.*) West coast of Newfoundland. (*J. Bell.*)

(3039.) **L. clavatum,** Linn.; Hook. Fl. II., 267.

Very common in damp woods throughout Canada. West coast of Newfoundland. (*J. Bell.*) Brigus, Newfoundland (*R. Bell.*) Windsor, Halifax, Truro and Pictou, N.S. (*Sommer's Cat.*) In dry woods, common in New Brunswick. (*Fowler's Cat.*) Common on Anticosti and Prince Edward Island, and along the Gaspé Coast, Q. (*Macoun.*) Vicinity of Ottawa. (*Fletcher Fl. Ott.*) Truro, N.S.; and Sault Ste. Marie, Ont. (*Burgess.*) Missinaibi River, Ont. (*R. Bell.*) Lake Mistassini, N. E. Ter. (*J. M. Macoun.*) Common in eastern and north-western Ontario. (*Macoun.*) Throughout Canada to the Saskatchewan. (*Hook. Fl.*)

Var. *β.* **monostachyon,** Hook. Fl. II., 267.

Little Tobique Lakes, N.B., 1884. (*Hay.*) Along Brackley Point Road, Prince Edward Island, 1888. (*Macoun.*) Blood-vein River, Lake Winnipeg. (*J. M. Macoun.*) Rocky Mountains, north of Smoking River. (*Hook. Fl.*)

Var. *δ.* Hook. Fl. II., 267.

Northwest America, from Observatory Inlet to Stikine. (*Hook. Fl.*) Roadside, between Hastings and New Westminster, B.C., spikes four instead of two; Mount Benson, near Nanaimo, Vancouver Island. (*Macoun.*)

(3040.) **L. complanatum,** Linn.; Hook. Fl. II., 267.

West coast of Newfoundland. (*J. Bell.*) Halifax, Truro and Pictou, N.S. (*Sommer's Cat.*) In dry woods; common in Kent Co., and at Campbellton, N.B. (*Fowler's Cat.*) Tobique River, N.B. (*Hay.*) Salmon River, N.B. (*Wetmore.*) In woods at Kingston, N.S.; at Cantire, Prince Edward Island, and along the Gaspé Coast, Q. (*Macoun.*) Vicinity of Ottawa. (*Fletcher Fl. Ott.*) Missinaibi River, Ont. (*R. Bell.*) Lake Mistassini, N. E. Ter. (*J. M. Macoun.*) Crane Lake, Muskoka, Ont. (*Burgess.*) Very common in cool woods throughout northern Ontario and westward to Lake Nepigon, and

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Kakabeka Falls, Ont., and Swan Lake, Man.; mossy woods at Castle Mountain, Rocky Mountains, and westward to the Selkirk and Gold ranges, B.C. (*Macoun.*) Wigwam River, and Dean or Salmon River, B.C. (*Dawson.*) From Lake Huron to the Saskatchewan. (*Hook. Fl.*) Northwest coast. (*Menzies.*) Pine Grove near Blue Church Cemetery, Prescott; and woodlands west of Brockville, Ont.; not common. (*Billings.*)

(3041.) **L. alpinum,** Linn.

Elevated parts of the Rocky Mountains, Lat. 52°-56°. (*Drummond.*) North of Griffin Lake on the summit of the Gold Range, B.C.; altitude 6500 feet. (*Macoun.*) We are doubtful of even these specimens, and they may possibly belong to *L. sabinæfolium*, although the flattened stems and leaves of two sizes are like *L. alpinum* of Europe.

CXXII. SELAGINELLACEÆ.

761. SELAGINELLA (BEAUV.)

(3042.) **S. spinosa,** Beauv.; Gray, Man., ed. VI., 698.

S. selaginoides, Link.; Gray, Man., ed. V., 675.

Lycopodium selaginoides, Linn.; Hook. Fl. II., 267. Pursh Fl. II., 654.

In wet grassy places along rivers and on mountains. Gunn River, Anticosti; along the Madeline and Ste. Anne des Monts rivers, Gaspé, Q. (*Macoun.*) Mossy shore of Boundary Lake, Q. (*Pringle.*) Low shore at Saugeen, Ont. (*Burgess.*) Shore of the Bruce Peninsula at the Fishing Lakes; very common along the north shore of Lake Superior and shores of Lake Nepigon, Ont.; rather common on wet banks along all mountain streams from the Bow River at Morley to Bear Creek in the Selkirk Mountains. (*Macoun.*) Canada. (*Michaux.*) Along the Saskatchewan. (*Drummond.*) Ounalashka. (*Rothr. Alask.*)

(3043.) **S. rupestris,** Spring.

Lycopodium rupestre, Linn.; Hook. Fl., II., 267.

Quite common on barren hills, in sand, on rocks, and high up on mountains, especially westward. Keswick Ridge, N.B. (*Fowler's Cat.*) Vicinity of Ottawa. (*Fletcher Fl. Ott.*) Common at Chalk River on the Ottawa, also at Belleville, Hastings Co., and on Rice Lake Plains,

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and barren hills in Murray Tp., Northumberland Co., Ont; east coast of Lake Nepigon and on sand hills throughout the prairie region; abundant on dry arid soil at Morley and on the summits of the higher Rocky and Selkirk mountains; Gold Range, B.C. At home in the valley as well as on the mountain top. (*Macoun.*) On rocks, Lake of the Woods and Parry Sound, Ont. (*Burgess.*) Eastern Summit of Kootanie Pass, Rocky Mountains. (*Dawson.*) North shore of Lake Superior. (*Agassiz.*) Rocks in Pine Grove, two miles from Prescott, near the river, and rocks west of Brockville, Ont.; not uncommon. (*Billings.*)

Var. β., Hook.

Lycopodium rupestre, var. β., Hook. Fl. II., 267.

Northwest America. (*Douglas.*) Observatory Inlet. (*Dr. Scouler.*) Abundant on rocks throughout Vancouver Island, and on the mainland of British Columbia west of the Coast Range. Branches much longer than in the eastern form and the leaves looser. (*Macoun.*)

(3044.) **S. apus,** Spring.

Low marshy places along the base of "The Hill" at Belleville, and between it and the Grand Junction Railway; very abundant in wet sandy soil, Presqu'Ile Point, Lake Ontario; low marshy ground, Owen Sound, and Red Bay, Lake Huron. (*Macoun.*) Vicinity of Ottawa. (*Fletcher Fl. Ott.*) Springy, grassy places, London, and Komoka, Ont. (*Burgess.*)

762. ISOETES, Linn. (QUILLWORT.)

(3045.) **I. lacustris,** Linn.; Hook. Fl. II., 268.

Saskatchewan. (*Drummond.*) St. Francis Lakes, Q. (*Pringle.*) River St. Marie at the head of the Canal. 1869. (*Macoun.*)

(3046.) **I. echinospora,** Durieu. Var. **Braunii,** Engelm.

In water along the borders of lakes chiefly in the Laurentian districts. Rather common in Charlotte Co., N.B. (*Vroom.*) Shelburne, N.S. (*J. P. James.*) In Partridge Lake, Anglesea, Addington Co., Ont. (*Macoun.*) Vicinity of Quebec. (*Pringle.*)

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Var.———?

Abundant in Sproat Lake and Somas River at Alberni, west side of Vancouver Island, Aug., 1887. (*Macoun.*)

(3047.) **I. Tuckermani,** A. Braun.

In water at the outlet of Potter's Lake, North Sydney, Cape Breton. (*Macoun & Burgess.*)

(3048.) **I. Bolanderi,** Engelm.

Abundant in a marshy pond on the Indian Reservation at Kamloops, B.C. It was partly in and partly out of water. This is considered slightly different from true *I. Bolanderi* by Prof. Underwood. Quite common in Shushwap Lake at Sicamous, B.C. (*Macoun.*)

(3049.) **I. riparia,** Engelm. Var. **Canadensis,** Engelm.

In Crow River, immediately above the dam at Marmora Iron Works, Hastings Co.; also in Gull River at the head of Mud-turtle Lake, Victoria Co., Ont. (*Macoun.*)

(3050.) **I. Nuttallii,** A. Braun. in herb.

Very common on rocky springy ground near the Half-way House between Nanaimo and Wellington Mine, Vancouver Island, June 1887. (*Macoun.*)

(3051.) **I. maritima,** Underwood, Bot. Gaz. XIII. 94. N. Sp.

"Amphibious or mostly terrestrial; root-stock small, only slightly bilobed; leaves 8-15, rigid, green, 2-5 cm. long, 1·5 mm. wide, with abundant stomata; sporangia oval 4 mm. long, 2·5 mm. wide, brownish white, covered one-third to one-half by the velum; ligule small inconspicuous; macrospores 0.42—0.48 mm. thick, densely spinulose, the spines somewhat blunt, but rarely confluent; microspores white, smooth, 0.032—0.035 mm. thick."

Salt marshes, Alberni Canal below Alberni, Vancouver Island, Aug. 1887. (*Macoun.*)

CXXIV. MARSILIACEÆ.

763. MARSILIA, Linn.

(3052.) **M. vestita,** Hook. & Grev.

Abundant on desiccated ground at the north end of the Cypress Hills, Alberta; also on sandy soil, covered occasionally with water, on the Indian Reservation at Kamloops, B.C. (*Macoun.*)

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(3053.) **M. mucronata,** A. Braun. MSS. Am. Journ. Sci. 2nd. Ser. Vol. III., 55.

In pools on the open prairie east of the Hand Hills, Alberta, Aug. 8th, 1879. (*Macoun.*)

CXXV. SALVINIACEÆ.

764. AZOLLA, Lam.

(3054.) **A. Carolinlana,** Willd.; Hook. Fl. II., 268.

Floating on the still waters of Lake Ontario. (*Pursh.*) In water near Burlington Beach, Hamilton, Ont. (*Logie, Buchan.*) Very abundant in still water at Salmon Arm, Shuswap Lake; and in pools along the C. P. Ry. between the bridge at Sicamous and the first crossing of Eagle River, B.C. (*Macoun.*)

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Additions and Corrections to Parts I-IV.

PART I.

2. ANEMONE.

(3055.) **A. Oregana,** Gray, Proced. Amer. Acad., XIV., 308.

A. nemorosa, Linn. var. (?) Macoun, Cat. III., 478.

When compiling Part III., I separated the western form of *A. nemorosa* from the eastern one, being satisfied that it was a distinct variety. Since then Dr. Gray has erected it into a new species under the above name. All references in Part III. belong here. Not uncommon in low damp woods in the southern part of Vancouver Island, 1887. (*Macoun.*)

765. ANEMONELLA, Spach.

(19.) **A. thalictroides,** Spach.; Gray Man. ed. VI., 39. (1890.)

All references under *Thalictrum anemonoides,* Part I., 14 & III., 478, belong here.

3. THALICTRUM.

(3056.) **T. minus,** Linn. Var. **Kemense,** Trelease, Proced. Bos. Soc. Nat. Hist., XXIII., 300.

Alaska. (*Trelease.*)

(22.) **T. polygamum,** Muhl.; Gray, Man. ed. VI., 39. (1890.)

T. Cornuti, Macoun, Cat., I., 15.

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There is still much confusion regarding the distribution of this species and *T. purpurascens*. Collectors would confer a favor by gathering fruit as well as flowers. "This species is never glandular, so that all specimens with glandular pubescence are apparently referable to *T. purpurascens*."

(3057.) **T. venulosum,** Trelease, Proced. Bos. Soc. Nat. Hist., XXIII., 302.

"Glabrous and glaucous, the stem, petioles and sepals purple-tinted, the foliage typically pale or whitened. Stem simple, erect, 7-20 inches high. Stem leaves 2-3, long petioles, 3-4 ternate. Leaflets approximated, short stalked, moderately firm, rounded and lobed at the apex as in *T. dioicum*, the lower surface rugose-veiny. Panicle simple, narrow, its short erect branches few-flowered. Flowers dicœcious, small. Sepals ovate. Stamens 10-20, on slender filaments; anthers oblong, slender-pointed. Achenia about eight, nearly sessile, 4 mm. long, ovoid tapering into a straight beak; thick-walled and otherwise similar to those of *T. dioicum* except that they are two-edged and commonly with one less groove on each side. Stigma sagittate. Seed ovid, pointed at one end, 1 × 2 mm., filling the ovary." British America. (*Franklin Expedition.*) Saskatchewan region. (*Bourgeau.*) On the Nechacco River, Northern British Columbia, 1875. (*Macoun.*)

4. MYOSURUS.

(25.) **M. minimus,** Linn. Var. **lepturus,** Gray.

M. minimus, Macoun, Cat., I., 15 & III., 479 in part.

All references to Vancouver Island specimens are placed here. This species is quite common in the neighbourhood of Victoria, Vancouver Island, in damp spots in pasture fields. Dr. Gray places this variety under *M. apetalus*, Gay, but I prefer Prof. Greene's opinion in Bull. Torr. Bot. Club, xiii., 61, that it should be placed under *M. minimus*.

(26.) **M. apetalus,** Gay.; Gray, Torr. Bull. Bot. Club, XIII., 2.

References under *M. aristatus*, Part I., 15 & III., 479, belong here.

5. RANUNCULUS.

(3058.) **R. circinatus,** Sibth.; Gray, Man., ed. VI., 40 (1890.)

References under *R. aquatilis*, Linn., var. *stagnatilis*, Part I., 16, belong here. In ponds at Agassiz, and on the Reservation at Kamloops, B.C., 1889. (*Macoun.*)

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(28.) **R. aquatilis,** Linn.; Gray, Proc. Amer. Acad, XIII., 363.

All references under *R. hederaceus*, Part I., 15, and under *R. aquatilis*, var. *heterophyllus*, Part III., 479, belong here. Quite common in many parts of Vancouver Island, especially at Cedar Hill, Goldstream, Nanaimo, and Salt Spring Island, Gulf of Georgia; also at Agassiz and by a pond on the mountain south of Spence's Bridge, B.C., 1889. (*Macoun.*) True *R. hederaceus* has been collected by the Rev. A. Waghorne on Newfoundland.

(29.) **R. multifidus,** Pursh, var. **terrestris,** Gray, Man., ed. VI., 41 (1890.)

References under *R. multifidus*, Pursh, var. β. Part I., 16, belong here. On mud, Bonaparte River, B.C. (*J. M. Macoun.*) Shore of Griffin Lake, B.C. (*Macoun.*)

(3059.) **R. reptans,** Linn.; Torr. & Gray, Fl. I., 16.

R. Flammula, Linn., var. *reptans*, Meyer; Macoun, Cat., I., 17.

We agree with Dr. Britton in going back to the old name for this species and hence would place all our specimens of *R. Flammula* var. *reptans* under this name.

(31.) **R. Flammula,** Linn., var. **intermedius,** Hook. Fl. I., 11.

Gravelly or muddy margins of streams. Donald, Columbia Valley, 1885; Griffin Lake, Gold Range; Kamloops, Agassiz, Port Haney, Hastings, and Lulu Island, B.C., 1889; also frequent on Vancouver Island. 1887. (*Macoun.*)

(3060.) **R. natans,** C. E. Meyer.

To this species must be referred all the specimens included in *R. multifidus*, var. γ. *repens*, Part I., 16, & III., 480. Albion Road, Prince Edward Island, 1888; Bonaparte River, and Griffin Lake, Gold Range, B.C., 1889. (*Macoun.*)

(3061.) **R. Eschscholtzii,** Schlecht. Hook. Fl. I., 18.

All references under *R. nivalis* var. *Eschscholtzii*, Watson, Part I., 20, & III., 480, belong here. Common on Mount Queest, and other summits of the Gold Range, B.C., at an altitude of 5000 to 7000 feet, 1889. (*Macoun.*)

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(3062.) **R. acriformis,** Gray, Proced. Amer. Acad., XIII., 374.

R. acris, Hook. Fl. I., 18, in part.

"A foot high, strict, with pubescence in good part appressed; leaves all palmately or pedately and deeply 3-5 parted or even divided, and often again 2-3 cleft into narrow lanceolate or linear segments or lobes; petals orbicular-obovate, one-fourth inch long, hardly double the length of the spreading calyx; akenes over a line long; beak of half their length." Northern Rocky Mountains, Lat. 58°. (*Drummond* vide *Gray.*)

(3063.) **R. hispidus,** Michx.; partly DC.

R. repens, Linn., var. *hispidus,* Torr. & Gray; Macoun, Cat. I., 21.

All the specimens of our native forms referred to *R. repens* var. *hispidus,* belong here, or to the next. Dr. Gray in his last revision placed the species after *R. Pennsylvanicus,* which is evidently its proper place. At present it is rather difficult to separate specimens of this form from *R. septentrionalis,* Poir., and it is very desirable that all Canadian collectors get good fruiting specimens of what we formerly included in *R. repens* and its variety. Our specimens of *R. hispidus* are as below. Mouth of Nepigon River, Lake Superior; Pheasant Plain, Man.; Red Deer River, near Hand Hills, Alberta; along the Columbia River at Donald; at Kamloops, Agassiz, and Port Haney, B.C. (*Macoun.*) Wigwam River, B.C. (*Dawson.*)

(3064.) **R. septentrionalis,** Poir.; Gray, Man., ed. VI., 43. (1890.)

Nearly all the synonymy placed under *R. repens* var. *hispidus* by me in Part I., page 20 of this Catalogue is transferred to this species by Dr. Gray, so that nearly all the localities for the former species may possibly belong to this, which ranges from New Brunswick to Manitoba. Our specimens of it are as below. In low ground along streams, in alluvium. Campbellton, N.B. (*Chalmers.*) Chipman, N.B. (*Wetmore.*) Whycocogmah, Cape Breton; Black River, Prince Edward Island; Becscie River, Anticosti; Madeline River, Gaspé, Q.; Cold Creek Valley, near Wooler, Ont. (*Macoun.*) Vicinity of London, Ont., and var. *nitidus,* Part I., 22, from London. (*Burgess.*)

(3065.) R. HEBECARPUS, Hook. & Arn.

Introduced in ballast on the wharves at Nanaimo, Vancouver Island. (*Macoun.*)

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(51.) **R. occidentalis,** Nutt.; Gray, Proced. Amer. Acad., XIII., 372; Macoun, Cat., I., 22.

R. Nelsoni, Gray; Macoun, Cat., I., 22.

Dr. Gray in his late revision takes *R. occidentalis* as the type of a multiform species and places the following varieties under it.

Var. **robustus,** Gray, l. c., 373.

R. occidentalis, Gray, Proced. Amer. Acad., VIII., 374.

A span to a foot or more in height, stout-stemmed and ample-leaved, large flowered. Chiefly Alaskan. (*Gray.*) Our specimens are from Queen Charlotte Islands, 1878 (*Dawson*), and Victoria, Vancouver Island, 1887. (*Macoun.*)

Var. **Lyallii,** Gray, l. c.

This variety has rather large thin leaves, short peduncles and petals not longer than the calyx. Valley of Flathead River, Rocky Mountains; mountains, south of Tulameen River, B.C. 1888. (*Dawson.*) Mountains, north-west of Spence's Bridge, B.C. 1889. (*J. M. Macoun.*)

Var. **tenellus,** Gray, l. c.

R. Nelsoni var. *tenellus*, Gray; Macoun, Cat., I., 22.

Slender, sometimes tall and with long internodes, often glabrate; leaves simpler and smaller. Common on Vancouver Island and west of the Coast Range, B.C. (*Macoun.*)

(2099.) R. PARVULUS, Linn.; Gray, Proced. Amer. Acad., XIII., 378.

R. muricatus, Macoun, Cat., III., 481.

"Akenes smooth and even or at length sprinkled with some scattered papillæ, especially towards the margin." In *R. muricatus* the akenes are strong-beaked, tuberculate or echinate. Only station known St. John's, N.B. (*Hay.*)

10. DELPHINIUM.

(66.) **D. scopulorum,** Gray, var. **glaucum,** Gray, Bot. Gaz., XII., 52.

D. scopulorum, Gray; Macoun, Cat., I., 25, in part.

All our Rocky Mountain specimens are of this variety. Mountains north of Finlayson Lake, N.W.T., Lat. 61°, 1887. (*Dawson.*)

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29. NYMPHÆA.

(3066.) **N. tetragona,** Georgi, Reise im. Russ. Reichs, I., 220. (1775.)

Castalia tetragona, Lawson, Trans. Roy. Soc. Can., VI., sec. iv., 112.
C. pygmæa, Salisb. Parad. Lond. t., 68.
Nymphæa pygmæa, Ait. Hort. Kew., ed. 2., III., 293.

Dr. Britton of Columbia College, New York, after a careful examination of all available specimens has satisfied himself that this species is quite distinct from *N. odorota* var. *minor*, Sims. He says:—"The plant may at once be distinguished from the eastern *N. odorota* var. *minor*, by the oblong leaves, sometimes nearly twice as long as broad, with narrow, acutish lobes, and the flowers still smaller with 7 to 8 rayed stigma." Misinaibi River, Northern Ontario, 1879. (*R. Bell.*) In ponds along the Severn River, Keewatin, 1886. (*J. M. Macoun.*)

(93.) **N. reniformis,** DC.; Gray, Man., Ed. VI., 56. (1890.)

References under *N. tuberosa*, Paine; Gray, Man., ed. V., 56 (1867); Macoun, Cat., I., 31, belong here.

30. NUPHAR, Smith.

(97.) **Nuphar advena,** Ait. f. var **minus,** Morong.

References under *N. luteum*, Smith, var. ——— (?) Part I., 23, belong here.

766. STYLOPHORUM, Nutt.

(3067.) **S. diphyllum,** Nutt. (Celandine Poppy.)

Damp woods, from Plover Mills to Thorndale, Middlesex Co., Ont., 15th May, 1887. (*R. Elliott.*) Near London, Ont. (*Dearness.*)

40. NASTURTIUM.

(115.) **N. palustre,** DC. Var.

Our specimens placed here agree exactly with Suksdorff's plant collected May 4th, 1885, and distributed with the above name. The long pods, over half an inch long, with stiff branching stem and deep fusiform root distinguish it from all other forms of *N. palustre* in our possession. Our specimens are from Port Haney, and Agassiz in the lower

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valley of the Fraser River, B.C. The same form was collected on Vancouver Island, near Cedar Hill, in 1887. Other specimens approaching these were collected in muddy places at Kamloops, B.C., 1889. (*Macoun.*)

(3068.) **N. obtusum,** Nutt.; Torr. & Gray, Fl. I., 74.

This plant has been received from the United States as *N. lyratum*, Palmer, Col. 1876, No. 12, and as *N. obtusum*, Palmer, Col. 1877, No. 33. The plant in question is only about four inches high and branches from the root. Growing in ground subject to overflow, Thompson River, Kamloops, B.C., 1889; also at Nanaimo, Vancouver Island, 1887. (*Macoun.*)

42. CARDAMINE.

(3069.) **C. Lyallii,** Wat., Proc. Am. Acad., XIV., 466.

C. cordifolia, Wat., Bot. King. Exp., 19, in part; Gray, Proc. Amer. Acad., VIII., 376; Torr. Bot. Wilkes, 299.

"Glabrous; stem erect from a running root-stock, simple or branched, a foot or two high; leaves few (4 to 8), petiolate, undivided, reniform to cordate, the margin sinuate, 1 to 3 inches broad; raceme pedunculate; flowers white; pods one inch long or less, on spreading pedicels, rather shortly alternate to a very short style, radicle cleft to the middle." On the southern borders of British Columbia. (*Lyall.*)

(125) **C. Douglasii,** (Torr.) Britton, Trans. New York, Acad. Sci., IX., 7. (1889.)

C. rotundifolia, var. *purpurea*, Macoun, Cat., I., 40.

I entirely agree with Dr. Britton in raising this plant to the rank of a species. It now takes the place of *C. rotundifolia* and its variety in Part I., 40 of this catalogue, references under *C. rotundifolia* going under *C. rhomboidea*, while those under *C. rotundifolia* var. *purpurea*, go here.

(129.) **C. pratensis,** Linn., var. **occidentalis,** Watson.

In springs in deep shade above the railway bridge at Nanaimo, Vancouver Island, June 3rd, 1887. (*Macoun.*)

Var. **angustifolia,** Hook.

Finlayson River, Lat. 61°, N.W.T., July 18th, 1887. (*Dawson.*) Cape Chudleigh, Ashe's Bay, Upper Savage Islands and Digge's Island,

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Hudson Strait. (*R. Bell.*) The specimens collected by Dr. Bell were referred to *C. pratensis* in Part III., page 480. Since then, specimens received from Greenland, have shown that these are the variety with bright purple flowers.

(130.) **C. hirsuta,** Linn., var. **montana.**

This is a very distinct form and seems to be closely related to *C. sylvatica*, but differs from that species in growing on mountains and in wet places. It approaches *C. oligosperma* in having its leaflets almost petioled. The specimens hitherto referred to *C. hirsuta* var. *sylvatica*, and collected in the Rocky and Selkirk mountains, belong here. Common on the wet slopes of Mount Queest and other high mountains in the Gold Range, near Griffin Lake, B.C., altitude 6000–7000 feet. (*Macoun.*) Another form near the coast at Burrard Inlet has also been referred to *C. hirsuta*, var. *sylvatica*, but it cannot be that species as it differs in many minor points besides growing in wet ditches.

(3070.) **C. flexuosa,** With.; Britton, Trans. N.Y. Acad., IX., 8. (1889.)

C. hirsuta, Linn., var. *sylvatica*, Gray, Man., ed. V., 67 (1867); Macoun, Cat., I., 41.

Dr. Britton says of this species:—"So far as I have observed, its habitat is on rocky banks in more or less shaded woodlands; that of *C. hirsuta* being either actually in the water or in very moist situations. It appears to be a smaller plant than *C. hirsuta*, with a decidedly flexuous stem, the leaves smaller and with narrower divisions." Our knowledge of this species agrees exactly with that of Dr. Britton, and we have no hesitation in changing the names as above. Our specimens are from "dry rocks," close to Shannonville Station on the G.T.R., Hastings Co., Ont., 1864; and Island Portage, Dawson Route west of Lake Superior, 1872. (*Macoun.*)

767. PLATYSPERMUM, Hook.

(3071.) **P. scapigerum,** Hook.

On open slopes, Mount Finlayson, Goldstream, Vancouver Island, May 18th, 1887. (*Macoun.*)

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43. ARABIS.

(3072.) **A. humifusa,** (J. Vahl.) Watson.

A petræa, Lam.; Macoun, Cat., I., 42, in part.

Greenland and Arctic Islands. The Lake Superior reference in Part I., goes to *A. lyrata,* and the Rocky Mountains ones to *Sisymbrium humile.*

Var. **pubescens,** Watson.

Gravelly shores of Hudson and James bays. West coast of Hudson Bay, near mouth of Severn River, Lat. 56°, August 10th, 1886; South Twin Island, James Bay, July 17th, 1887. (*J. M. Macoun.*) York Factory, Hudson Bay. (*R. Bell.*)

(132.) **A. lyrata,** Linn., var. **occidentalis,** Watson.

A. petræa, Lam. var. *ambigua,* Regel.

Dr. Watson has made the above change, and this form is now evidently in its proper place. Apparently quite common in the northern part of British Columbia. A specimen received from the British Museum and labelled *A. lyrata* (no locality) is this variety.

(3073.) **A. Lemmoni,** Wat., Proc. Am. Acad., XIV., 467.

A. canescens and var. *latifolia,* Wat., Bot. King. Exp., 16, and Bot. Calif., I., 32, II., 431; Macoun, Cat., III., 487.

"Perennial, low (a span high or less), glaucous, hoary below with fine densely stellate pubescence, the stems several from a branching caudex, slender, glabrous above; lower leaves spatulate-oblanceolate, rarely with one or two teeth, 6 to 9 lines long, the petiole sometimes ciliate, the cauline oblong-lanceolate, auriculate, mostly glabrous or nearly so; flowers small, rose-colored, the sepals pubescent; pods ascending or widely spreading on short pedicels (1 to 3 lines), glabrous, curved, 1 to 2 inches long by $\frac{2}{3}$ of a line wide, more or less attenuate to a sessile stigma or short style; seeds in one row, orbicular, narrowly winged." Mountains in the Bow River Pass, Sept. 13, 1879; on the summit of Canmore Mountain, Rocky Mountains, June 27, 1885. (*Macoun.*)

(3074.) **A. confinis,** Wat., Proc. Amer. Acad., XIV., 466.

A. lævigata, Hook. Fl. Bor.-Am., I., 43.
Turritis glabra and var. β, Torr. & Gray, Fl. I., 78, and 666.
T. brachycarpa, Torr. & Gray, Fl. I., 79.
T. stricta, Torr. Fl. N.Y., I., 53, not Grah.; Gray, Gen. Ill., I., 144, t. 59.
A. Drummondii, Gray, Man., ed. V., 69 (1867); Macoun, Cat. I., 43, in part.

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"Biennial, rarely somewhat glaucous; stems erect, one or several, usually simple, 1 to 3 feet high; lower leaves oblanceolate, usually dentate, finely stellate-pubescent or sometimes glabrous, the cauline oblong to linear-lanceolate, auriculate; flowers white or pinkish; pods more or less spreading or sub-erect, a line broad or less, straight or slightly curved, usually more or less attenuate above and beaked; seeds small, narrowly oblong, winged." This includes all *A. Drummondii* and var. *brachycarpa* from the Atlantic to the Rocky Mountains.

(138.) **A. Drummondii,** Gray.

Only the Rocky Mountains and westward are included in the range of this species. Fine specimens were collected at Kamloops, Spence's Bridge and Lytton, B.C., in the summer of 1889. (*Macoun.*)

(3075.) **A. Columbiana.**

Resembling *A. arcuata* in the shape of the pods, but differing very much in general appearance. The pods are longer and are exactly sickle-shaped, and the pedicel is shorter; flowers white, calyx almost smooth, but occasionally with a few branching hairs which are more numerous on the leaves and stem, especially towards the base; leaves at the foot of the stem slightly toothed and tapering into a petiole, those of the stem sessile and often clasping. It may be designated a winter annual as its seeds are ripe early in May. Quite common on the lower slopes of the mountains bordering the Thompson and Fraser rivers from Spence's Bridge to Yale, B.C. First detected May 19, 1875. (*Macoun.*)

(2101.) **A. canescens,** Nutt.

On mountain slopes in the dry region of British Columbia, Cherry Bluff, near Kamloops, and throughout the Nicola Valley. (*Dawson.*) Along the mountain slopes at Yale, Lytton, Spence's Bridge, and Kamloops, B.C. (*Macoun.*)

46. SISYMBRIUM.

(157.) **S. humile,** C. A. Meyer; Gray, Man., ed. VI., 71. (1890.)
Arabis petræa, Macoun, Cat., I., 42, & III., 486.

Since Parts I. & III. of my catalogue were published, Dr. Watson has carefully looked into the various specimens of *A. petræa* sent from Canada, and has referred most of them as above. It follows therefore that almost all references to *A. petræa* in Parts I. & III. must be considered cancelled. See *A. humifusa.*

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(3076.) S. SINAPISTRUM, Crantz.

S. Pannonicum, Jæg.

This species has been introduced in a number of places along the line of the Canadian Pacific Railway. Castle Mountain, Rocky Mountains, 1885. (*Macoun.*) Near Nepigon Bridge, Lake Superior, 1886. (*Fletcher.*) At Port Arthur, Thunder Bay, Lake Superior, 1889. (*Dr. Britton.*) On an embankment along the C. P. Ry., about 300 yards west of Burketon station, 45 miles east of Toronto, 1889. (*W. Scott.*)

51. DRABA.

(173.) **D. Fladnizensis,** Wulf.; Watson, Proced. Amer. Acad., XV., 258.

References under *D. androsacea*, Part I., 51, belong here.

(176.) **D. incana,** Linn. var. **arabisans,** Watson; Gray, Man., ed. VI., 67. (1890.)

D. arabisans, Michx; Macoun, Cat., I., 52; Gray, Man., ed. V., 71. (1867.)

Draba incana is described in Gray's new manual as having *oblong to lanceolate pods* which are generally acute and *straight* and often *pubescent*, while those of var. *arabisans* are *glabrous, acuminate* or *acute* and *twisted.*

54. LESQUERELLA, Watson, Proced. Amer. Acad., XV., 249.

(187.) **L. Ludoviciana,** Watson, Proced. Amer. Acad., XV., 252.

Vesicaria Ludoviciana, DC.; Macoun, Cat., I., 54, in part.

All the prairie references in Part I., belong here. The specimens from British Columbia to the next.

Var. **arenosa,** Watson, Proced. Amer. Acad., XV., 252.

Vesicaria arenosa, Richards. in Frank. Journ., 26.

Watson places this in the Saskatchewan region, but if *V. arenosa* is a correct reference, then its habitat is "on a hill 700 feet high at Bear Lake River," Lat. 65°. This is the station mentioned by Richardson in *Hooker's Flora, Bor. Am., I.*, 48.

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(3077.) **L. Douglasii,** Watson, Proced. Amer. Acad., XV., 255.

Vesicaria Ludoviciana, Macoun, Cat., I., 54, in part.

"Resembling *L. Ludoviciana,* but the pods smaller, obovate and very obtuse, *erect* upon spreading pedicels, and the cells only 2-ovuled; lower leaves sometimes ovate upon a narrow petiole." On the Columbia River east of the Cascade Mountains. (*Lyall.*) Similkameen Valley, B.C., June 23rd, 1877. (*Dawson.*)

(188.) **L. arctica,** Watson, Proced. Amer. Acad., XV., 254.

Vesicaria arctica, Richards; Macoun, Cat., I., 54, in part.

All the northern references belong here.

Var. **Purshii,** Watson, Proced. Amer. Acad., XV., 254.

Vesicaria arctica, Macoun, Cat., I., 54, in part, & III., 490.

Pod somewhat pubescent; septum complete. Island of Anticosti, Q. (*Sheppard* in Torr. & Gray.) Very common in the valley of Jupiter River, Anticosti, near the sea. (*Macoun.*)

59. SUBULARIA.

(196.) **S. aquatica,** Linn.; Macoun, Cat. I., 55.

Quite common in Muskoka Lake, Ont. (*Dr. Britton.*) In abundance along the shallow margin of Sproat Lake, near Alberni on the west side of Vancouver Island. (*Macoun.*)

61. THLASPI.

(3078.) T. PERFOLIATUM, Linn.; Hooker, Student's Flora, 41. (1884.)

Growing on a cold, wet, springy bank, Dundas Ravine, near Hamilton, Ont. "Must be introduced, but I cannot yet make out how it got where I found it." (*Burgess.*)

70. POLANISIA, Raf.

(3079.) **P. trachysperma,** Torr. & Gray, Man., ed. VI., 75. (1890.)

P. graveolens, Raf.; Macoun, Cat., I., 59, & III., 491.

All the stations recorded under *P. graveolens* from the North-west Territories, in Parts I. & III., pages 59 & 491, belong to this species. The

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two forms can be easily separated by their stamens. In this species they are long exserted, while in *P. graveolens* they scarcely exceed the petals.

CXVII. RESEDACEÆ. Mignonette Family.

716. RESEDA, Tourn. (DYER'S ROCKET.)

(3080.) R. ALBA, Linn.; Hooker, Student's Flora, 45. (1884.)

Growing in abundance at the wharf and by the roadside at Sicamous, C. P. Ry., B.C., 1889. (*Macoun.*)

74. SOLEA, Spreng., in part.

(225.) **S. concolor,** Ging.; Gray, Man., ed. VI., 31. (1890.)

References under *Ionidium concolor*, Benth. & Hook, Part I., 61, belong here.

75. VIOLA.

(228.) **V. primulæfolia,** Linn, var. **occidentalis,** Gray, Bot. Gaz. XI., 255.

V. Nuttallii, var. *linguæfolia*, Macoun, Cat., III., 493.

A form with ovate or spatulate-oblong leaves all tapering at base. Rocky places by a brook on a shady hill side, western summit of the North Kootanie Pass, Rocky Mountains, 1883. (*Dawson.*)

(229.) **V. blanda,** Willd., var. **palustriformis,** Gray, Man., ed. VI., 79. (1890.)

V. blanda, Macoun, Cat., I., 62, in part.

Specimens having the upper surface of the leaves, sparsely and finely hairy, are referred here. North Bay, Lake Nipissing, Ont., 1889. (*Dr. Britton.*) Sandy river margin, Lake Nepigon. (*Macoun*).

Var. **renifolia,** Gray, Man., ed. VI., 80. (1890.)

References under *V. renifolia*, Gray, Part I., 62, belong here.

(235.) **V. palmata,** Linn.; Gray, Man., ed. VI., 79.

Specimens referred to *V. cucullata*, Ait., var. *palmata*, Gray, Part I., 63, belong here.

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Var. **cucullata,** Gray, Man., ed. VI., 79. (1890.)

Specimens referred to *V. cucullata*, Ait., and V. *cucullata* var. *cordata*, Gray, Part I., 62, 63, belong here.

(238.) **V. Langsdorffii,** Fisch.; Macoun, Cat., I., 63.

In wet places and swamps, at Nanaimo and Mount Finlayson, Vancouver Island, 1887. (*Macoun.*) Marshes, Burnaby Lake, near Hastings, B.C., 1889. (*J. M. Macoun.*)

(2108.) **V. pedatifida,** G. Don.; Gray, Man., ed. VI., 79. (1890.)

Specimens referred to V. *delphinifolia*, Nutt, Part III., 493, belong here.

(240.) **V. canina,** L., var. **puberula,** Wat. in herb.; Gray, Man., ed. VI., 81. (1890.)

References under V. *canina*, var. *rupestris*, Regel., Part I., 64 & III., 493, belong here.

(243.) **V. pubescens,** Ait., var. **glabriuscula,** Gray, Bot. Gaz., XI., 291.

Specimens referred to var. *scabriuscula*, T. & G., Part I., 64, according to Gray should be called var. *glabriuscula*, as the plant is not really scabrous.

(3081.) **V. præmorsa,** Dougl.; Gray, Bot. Gaz., XI.. 289.

V. Nuttallii, var. *præmorsa*, Watson; Macoun, Cat. I., 65.

All the specimens collected on Vancouver Island belong here.

769. TUNICA, Scop.

(3082.) T. SAXIFRAGA, Scop.

"Has been introduced in gardens at London, Ont., and become quite a troublesome weed. Specimens were sent to me by Mr. Dearness, of London, Ont., which I referred to Dr. Watson." (*Burgess.*)

770. GYPSOPHILA, Linn.

(3083.) G. PANICULATA, Linn.

Introduced at Emerson, Manitoba. July 4th, 1887. (*Prof. Fowler.*)

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77. SILENE.

(255.) S. CUCUBALUS, Wibel; Gray, Man., ed. VI., 84. (1890.)

References under *S. inflata*, Smith, Part I., 67, belong here.

(256.) **S. Douglasii,** Hook. Fl. I., 88; Macoun, Cat., I., 67.

This species was gathered in small quantity on the summit of Mount Benson, near Nanaimo, Vancouver Island, altitude 3000 feet, June 8th, 1887. (*Macoun.*)

(2109.) **S. multicaulis,** Nutt.?

Specimens identical with Howell's Oregon specimens distributed under the above name were collected on the western side of Nicola Lake, June 7th, 1889. (*Macoun.*) I am still of opinion that my Rocky Mountain *Lychnis elata* is either that species or a new one. It is certainly not a *Silene*.

81. ARENARIA.

(292.) **A. physodes,** DC; Macoun, Cat., I., 73, & III., 292.

Yukon River, N.W.T., Lat. 62°; and Pelly Banks, N.W.T., 1887. (*Dawson.*)

82. STELLARIA.

(3084.) S. AQUATICA, Scopoli; Hooker, Student's Flora, 61. (1884.)

Roadsides and ditches at Stratford, Ont. Introduced. July 19th, 1886. (*Burgess.*)

83. CERASTIUM.

(309.) **C. arvense,** Linn., var. **oblongifolium,** Holl. & Britt.; Gray, Man., ed. VI., 88. (1890.)

References under *C. oblongifolium*, Torr., Part I., 77, belong here.

81. BUDA, Adns. (*Spergularia.*)

(319.) **B. marina,** Dumort; Gray, Man., ed. VI., 89. (1890.)

Tissa marina, Britton, Bull. Torr. Bot. Club, XVI., 126.
Spergularia media, Macoun, Cat. I., 85.

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Owing to our imperfect knowledge of this genus, our specimens were in some cases placed under the wrong species, but all have lately been examined by Dr. Britton, and we here repeat the localities of our herbarium specimens for each species of the genus. Salt marshes, St. John, N.B. (*Matthews.*) Annapolis, N.S. (*Prof. Fowler.*) Brackish sands along the coast at Brackley Point, Prince Edward Island; North Sydney, Cape Breton; Pictou, N.S.; salt lake, west of Long Lake, and Old Wives' Lakes, Assiniboia; salt marsh, Kamloops, and shore of Burrard Inlet, B.C.; on wet sand, Oak Bay and Nanaimo, Vancouver Island. (*Macoun.*)

(321.) **B. borealis,** Watson; Gray, Man., ed. VI., 90. (1890.)

Tissa salina, Britt., Bull. Torr. Bot. Club, XVI., 129.
Spergularia salina, Macoun, Cat. I., 80.

Salt marshes, coast of Kent Co., N.B. (*Prof. Fowler.*) Gravelly beach, below high-water mark, St. Croix River, St. Stephen, N.B. (*Vroom.*) Salt marshes, Brackley Point, and Mount Stewart, Prince Edward Island; Becscie River, Anticosti, and Restigouche River, Que. (*Macoun.*)

(3084.) **B. marotheca,** Fisch. & Meyer.

Tissa macrotheca, Britt., Bull. Torr. Bot. Club, XVI., 129.

Coast of Vancouver Island, at Beacon Hill and Oak Bay, near Victoria. (*Fletcher, Macoun, Newcombe.*) Crevices of rocks washed by the sea, Barclay Sound, Vancouver Island. (*Macoun.*)

(320.) **B. rubra,** Dumort; Gray, Man., ed. VI., 89. (1890.)

Tissa rubra, Britt., Bull. Torr. Bot. Club, XVI., 127.
Spergularia rubra, Presl; Macoun, Cat. I., 80

Bass River, N.B. (*Prof. Fowler.*) Halifax, N S., and North Sydney, Cape Breton; roadsides near Victoria, Vancouver Island. (*Macoun.*)

92. CLAYTONIA.

(3086.) **C. parviflora,** Dougl.; Hook. Fl. I., 225.

C. perfoliata var. *parviflora*, Torr.; Macoun, Cat., I., 83.

Distinguished from *C. perfoliata* by its spatulate to filiform-linear radical leaves, and its flowers scattered in a loose raceme on slender pedicels. Abundant at Goldstream, Vancouver Island, amongst gravel, May 18th, 1887. (*Macoun.*)

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Var. **depressa,** Gray, Proced. Amer. Acad., XIV., 281.

On river banks, probably sand-washes, British Columbia to Oregon. (*Gray.*) Vicinity of Victoria, Vancouver Island, 1885. (*Fletcher.*) Abundant on gravel banks at Cedar Hill, Goldstream, Cowichan River, Nanaimo and Qualicum, Vancouver Island, 1887. (*Macoun.*)

(3087.) **C. arctica,** M. F. Adams.

Extends from the Alaskan shores and islands to adjacent Asia. (*Dr, Gray,* in Proced. Amer. Acad. Sci., XIV., 279.)

(3088.) **C. tuberosa,** Pall.

Mainly Asiatic, but has been found at Plover Bay by Rothrock; and Muir collected it somewhere in Arctic Alaska. (*Dr. Gray* l.c.)

(3089.) **C. asarifolia,** Bongard, Veg., Sitch, 137.

C. Sibirica, Linn.; Macoun, Cat., I., 82, in part.

Dr. Gray says this species ranges from the Rocky Mountains in Montana and Idaho to Sitka. Coldwater River, B.C., June 14th, 1877. (*Dawson.*) Cedar Hill, Goldstream, and Nanaimo, Vancouver Island, 1887. (*Macoun.*)

(334.) **C. spathulata,** Dougl.; Hook. Fl. I., 226.

C. perfoliata, var. *spathulata,* Torr.; Macoun, Cat., I., 83.
C. gypsophiloides, Fisch. & Meyer.

Small, but comparatively large-flowered, an inch to a span high; cauline leaves from lanceolate-ovate to narrowly lanceolate, rarely connate into a round peltate or cupulate disk. Vicinity of Victoria, Vancouver Island, 1876. (*Dawson.*) Cedar Hill, and Mount Tolmie, Victoria, Vancouver Island, 1887. (*Macoun.*)

Var. **tenuifolia,** Gray, Proced. Amer. Acad., XIV., 282.

C. exigua, Torr. & Gray; Macoun, Cat., I., 83.

This has the cauline leaves narrowly linear, and is easily separated from the species by this character alone. Cedar Hill, and Mount Tolmie, near Victoria, Vancouver Island, 1875. (*Macoun.*)

(337.) **C. sarmentosa,** Bongard, Veg. Sitch., 137.

Dr. Gray says of this species:—"It would seem to be a species intermediate in certain respects between *C. parvifolia* and *C. Chamissonis*

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with the alternate leaves of the former, and these broadly ovate, obovate or the radical rotund, the larger of the latter with a blade half an inch long." Specimens collected in the valley of Eagle River at Griffin Lake in the Gold Range, were exactly the same as those found on the coast 350 miles to the west, and identical with all our other specimens of *C. parvifolia*; but those gathered in the bed of the same stream, at an altitude of 6500 feet, were altogether different and undoubted *C. sarmentosa*, as the species is defined by Dr. Gray. In addition to his characters, I may remark that all the stems are more or less curved and produce bulblets in the axils.

771. TALINUM, Adns.

(3090.) **T. spinescens,** Torr., Bot., Wilkes, 250.

Mountain slopes west of Stump Lake, B.C. Alt. 3400 feet. Aug. 1888. (*Dawson.*)

93. CALANDRINIA.

(3091.) **C. Columbiana,** Howell. (1886.)

Abundant in crevices of rocks on the summit of Mount Arrowsmith, Vancouver Island. Alt. 5500 feet, July 17th, 1887. (*Macoun.*) The plant collected by Lyall on the boundary of British Columbia is now referred to this species by Mr. T. Howell.

97. HYPERICUM.

(343.) **H. Ascyron,** Linn.; Coulter, Bot. Gaz. XI., 83.

References under *H. pyramidatnm*, Ait., Part I., 84, belong here.

(347.) **H. maculatum,** Walter; Coulter, Bot. Gaz., XI., 107.

References under *H. corymbosum*, Muhl., Part I., 85, belong here.

(349.) **H. Canadense,** Linn. var. **minimum,** Chois.; Coulter, Bot. Gaz., XI., 110.

H. anagalloides, Macoun, Cat. I., 85.

Dwarf 1 to 3 inches high, simple, few-flowered; leaves oblong, obtuse, 4 to 5 lines long, a line or two wide, smaller and more crowded below. Wet springy places, Cypress Hills, Assiniboia, Aug. 8th, 1880. (*Macoun.*)

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(350.) **H. formosum,** HBK. var. **Scouleri,** Coulter, Bot. Gaz., XI., 108.

References under *H. Scouleri*, Hook., Part I., 85, belong here.

(351.) **H. anagalloides,** Cham. & Schlecht; Coulter, Bot. Gaz., XI., 109.

In ditches and wet gravelly places. Mount Finlayson, 10 miles from Victoria, Vancouver Island. (*Fletcher.*) Common at Nanaimo, Qualicum, Comox and Horne Lake, Vancouver Island; Lulu Island, mouth of Fraser River, and Burrard Inlet at Hastings, B.C. (*Macoun.*)

98. ELODES, Adns.

(353.) **E campanulata,** Pursh.; Coulter, Bot. Gaz., XI., 111.

References under *E. Virginica*, Nutt., Part I., 86, belong here.

89. MALVA.

(3092.) M. BOREALIS, Wallm.; Torr., Mex. Bound. Rep., 38.

On ballast at Nanaimo, Vancouver Island, July, 1887. (*Macoun.*)

101. SIDALCEA.

(361.) **S. malvæflora,** Gray; Macoun, Cat. I., 87.

In Part I., 87, this and the next were considered one species. When Part III. (page 501) was published, we had reached the conclusion that we had also Watson's var. *Oregana.* Since then, Dr. Gray has elaborated the genus, and our herbarium specimens are divided as below. In dry thickets at Oak Bay, and Cedar Hill, near Victoria, Vancouver Island. (*Macoun.*)

(3093.) **S. Oregana,** Gray, Pl., Fendl., in part; Proced. Amer. Acad. XIV., 237.

Grassy slopes near Victoria, Vancouver Island. (*Fletcher.*) Abundant in salt marshes at Qualicum and Alberni, Vancouver Island. (*Macoun.*)

104. SPHÆRALCEA.

(365.) **S. acerifolia,** Nutt.; Gray, Proced. Amer. Acad. XIV., 294.

S. rivularis, Torr.; Macoun, Cat., I., 88, & III., 501.

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There are two forms of this species in British Columbia. One of a slender habit, with five-lobed small leaves, the lobes obtuse or short pointed, growing in thickets at Shuswap and Enderby, B.C.; the other a much stouter plant with coarse, generally five-lobed leaves, lobes with long tapering points, stems almost smooth. Salmon Arm, Shuswap Lake, B.C. (*Macoun*), and Elk River, Rocky Mountains. (*Dawson.*)

106. LINUM.

(372.) **L. Lewisii,** Pursh, Fl. I., 210; Trelease, Trans. St. Louis Acad. Science, V., 12.

L. perenne L. var. *Lewisii*, Eat. & Wright; Gray, Man., ed. VI., 102.

References under *L. perenne*, Linn., Part I., 89, belong here.

107. GERANIUM.

(3094.) G. DISSECTUM, Linn.; Gray, Man., ed. VI., 104.

Introduced in a few places in Canada. Port Arthur, west of Lake Superior. (*Dr. Britton.*) Vicinity of Victoria, and at Nanaimo, Vancouver Island. (*Macoun.*)

121. CEANOTHUS.

(402.) **C. ovatus,** Desf.; Macoun, Cat. I., 96.

Along the St. Clair River east of Point Edward, Ont. (*J. Dearness.*)

573. LIMNANTHES.

(2116.) **L. Macounii,** Trelease, Rev. of Geran.

L. Douglasii, Macoun, Cat., III., 502.
Flærkia proserpinacoides, Macoun, Cat., I., 91, in part.

Glabrous, 2-3 inches high; divisions of the leaves 5-9, remote, 3-6 mm. long, ovate, mostly 3-cleft, their lobes broad and very acute; flowers, 4-merous, not showy as in the other species; sepals oblong, rather obtuse, enlarging somewhat in fruit; petals white (?), oblong-cuneate, erosely truncate, 3-4 mm. long; stamens about equalling the petals, anthers 4 mm. long; fruit obovoid, 3 mm. long, with very prominent tubercles. (*Trelease.*)

Professor Trelease in his Revision of the Geraniaceæ made this a new species and named it after the discoverer.

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115. ILEX.

(395.) **I. verticillata,** Gray, var. **tenuifolius,** Eaton & Wright.

"Both the type (*Prinos verticillatus L.*) and this variety are found at London. The variety (by their description) is much the commoner form, is only slightly pubescent on the veins beneath the leaves, and grows in very wet places, often in water. The type occupies drier, but still damp, places, and has the whole under surface of the leaves, woolly pubescent." (*Burgess.*)

121. RHAMNUS.

(406.) **R. Purshiana,** DC.; Macoun, Cat. I. 96, & III., 504.

A small tree in damp thickets in every part of Vancouver Island as far north as Comox; on the mainland as far east as Sicamous in the Gold Range, B.C. 1889. (*Macoun.*)

127. RHUS.

(429.) **R. Canadensis,** Marsh.; Gray, Man. ed. VI., 119.

References under *R. aromatica,* Ait., Part I., 101, belong here.

129. LUPINUS.

(3095.) **L. aridus,** Dougl., Hook. Fl. I., 165.

Grassy slopes of Za-kwas-ki Mountain, head of Nicoamen River, B.C. Alt. 6,500 feet, Aug. 1889. (*Dawson.*)

(3096.) **L. microcarpus,** Sims.; Torr. & Gr., Fl. I., 371.

Abundant on the face of the clay cliff, fronting beach, near Beacon Hill, Victoria, Vancover Island. 1887. (*Macoun.*)

(443.) **L. micranthus,** Dougl., var. **microphyllus,** Wat.

Specimens referred to *L. micranthus,* var. *bicolor,* Wat., Part I., 103, belong here.

(3097.) **L. ——** ?

This fine species is related to *L. laxiflorus,* but Dr. Watson thinks it scarcely identical. Abundant at Kamloops and at the southern end of

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Shuswap Lake, B.C. 1889. (*Macoun.*) Specimens of this or a closely related species were obtained on the Upper Liard River, Lat. 60°, N.W.T., in the summer of 1887, by Dr. Dawson.

132. TRIFOLIUM.

(3098.) **T. cyathiferum,** Lindl.; Torr. & Gr., Fl. I., 320.

Dry gravel along the Cowichan River, Vancouver Island, 1887; on dry ground, Penticton, at the southern end of Lake Okanagan, B.C., 1889. (*Macoun.*)

133. MELILOTUS.

(3099.) M. PARVIFLORA, Desf.; Torr. & Gr., Fl. I., 321.

Introduced. Ballast heaps at Pictou, N.S, 1883. (*Macoun & Burgess.*) Ballast at Nanaimo, Vancouver Island, 1887. (*Macoun.*)

134. MEDICAGO.

(468.) M. DENTICULATA, Willd., var. APICULATA, Willd.; Hooker, Student's Flora, 95. (1884.)

Introduced. On ballast at Nanaimo, Vancouver Island, 1887. (*Macoun.*) Flower very small, yellow; stipules laciniate, pod coiled, reticulate but not spinose.

574. TRIGONELLA.

(2122.) T. HAMOSA, Linn.; Macoun, Cat. III., 506.

References under *T corniculata*, Linn, Part III., 506, belong here.

136. HOSACKIA.

(472.) **H. bicolor,** Dougl.; Macoun, Cat. I., 107.

In water in the bed of a brook, near the "Half-way House," between Nanaimo and Wellington Mine, Vancouver Island, 1887. (*Macoun.*)

(475.) **H. Purshiana,** Benth.; Macoun, Cat. I., 108.

Dry prairies, Souris Co., Man. (*Thos. Walker.*) Griswold, Man. (Rev. A. Burman.) On rocks by the sea at Esquimault, Vancouver Island. (*Macoun.*)

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(3100.) **H. subpinnata,** Torr. & Gray, Fl. I., 326.

Grassy places along the coast at Oak Bay and Beacon Hill, near Victoria, Vancouver Island, 1887; at the first tunnel above Yale on the C. P. Ry., and at Spence's Bridge, Kamloops, and Lake Okanagan, B.C. (*Macoun.*) Open ground, North Thompson River, B. C. (*J. M. Macoun.*)

142. ASTRAGALUS.

(3101.) **A. Mortoni,** Nutt.; Torr. & Gr., Fl. I., 330.

On sandy and gravelly soil in thickets at Trout Creek, near the southern end of Lake Okanagan, B.C., 1889. (*Macoun.*)

(523.) **A. stenophyllus,** Torr. & Gray, Fl. I., 329.

A. collinus, Macoun, Cat. I., 114, in part.
A. filipes, Torrey, Bot. Wilkes, 278.

Dry slopes Nicola Valley, 1877. (*Dawson.*) Abundant in the Nicola Valley and around Nicola and Stump lakes, B.C., 1889. (*Macoun.*) Good fruiting specimens were obtained. This is No. 523 of Part I., 115, which I was unable to determine, having only flowering specimens.

145. DESMODIUM.

(540.) **D. canescens,** DC.; Macoun, Cat. I., 118.

Not rare at Point aux Pins, Kent Co.; and abundant at Point Pelee, Essex Co., Ont. Growing in rather low-lying wet sandy thickets. (*Burgess.*)

577. ONOBRYCHIS.

(2130.) O. SATIVA, Lam.; Macoun, Cat. III., 511.

Cultivated on irrigated lands at Spence's Bridge and Kamloops, B.C., and escaped to brooksides. (*Macoun.*)

147. VICIA.

(554.) **V. Americana,** Muhl., var. **truncata,** Brewer.

Thickets and borders of woods, Kananaskis Station, Rocky Mountains, 1885; thickets at Agassiz, B.C., 1889; and at Beacon Hill and Gordon Head, near Victoria, and Nanaimo, Vancouver Island, 1887. (*Macoun.*)

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148. LATHYRUS.

(3102.) **L. Nuttallii,** Watson, Proced. Amer. Acad., XII., 450.

L. venosus, Macoun, Cat. I., 121, in part.

Stout and tall, more or less pubescent throughout, with loose woolly hairs; stipules, semi-sagittate, rather narrow; leaflets, 3 to 6 pairs, variable, narrowly or broadly elliptical, usually acute or acutish at both ends, apiculate, 1 or 2 inches long; rachis, tendril-bearing; peduncle shorter than the leaves, few-flowered; calyx teeth triangular, acuminate, the lower somewhat larger; petals reddish purple, 6 to 8 lines long; pod, glabrous, oblong, attenuate to a very short thick stipe, 1 to 1½ inches long by 4 lines wide; seeds, globose, brown. Common in thickets in British Columbia and Vancouver Island. In Part I., 121, this species was included in *L. venosus*, but is now separated by Dr. Watson.

155. PRUNUS.

(573.) **P. Virginiana,** Linn., Var. (?).

A form of this species, with very long deciduous sepals occurs in British Columbia, extending from the Fraser Valley northward to Telegraph Creek.

157. SPIRÆA.

(580.) **S. Douglasii,** Hook. var. **Menziesii,** Presl; Macoun, Cat. I., 127.

This variety is very common throughout British Columbia and Vancouver Island, while the type of the species is confined to Vancouver Island, as far as our knowledge of it extends.

A variety which we refer to *S. salicifolia,* was gathered at Sicamous in July, 1889. It would pass in the east for *S. salicifolia,* as it has a large branching panicle, white flowers, and long exserted stamens. So far *S. salicifolia* has not been found west of the Rocky Mountains, but is reported from the far north.

158. PHYSOCARPUS. (*Neillia.*)

(584.) **P. opulifolius,** Maxim.; Gray, Man., ed. VI., 153. (1890.)

References under *Neillia opulifolia,* Benth. & Hook., Part I., 127, belong here.

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160. RUBUS.

(593.) **R. stellatus,** Smith; Macoun, Cat., I., 130.

Port Simpson, coast of Northern British Columbia. (*Anderson.*)

(598.) **R. strigosus x leucodermis.**

A hybrid evidently between *R. strigosus* and *R. leucodermis* was found growing in profusion and fruiting abundantly on the hillsides, between the railway station and the hotel, and at other places at Sicamous, B.C. The fruit was very like that of *R. neglectus*, Peck, which is an undoubted hybrid between *R. strigosus* and *R. occidentalis*, but much more abundant and larger.

167. FRAGARIA.

(620.) **F. Virginiana,** Duch., var. **Illinoensis,** Gray.

Of all the specimens of this species in our collection, only one collected at Ottawa, Ont., by J. M. Macoun can be referred here. Collectors in western Ontario should look out for it.

171. POTERIUM.

(658.) **P. Sitchense,** Watson; Macoun, Cat. I., 143 & III., 519.

Salt marshes along the Alberni Canal, and Barclay Sound, Vancouver Island. (*Macoun.*) Lake Lindeman, Lat. 59°, B.C.; near the mouth of Lewes River, Lat. 62°, N.W.T. (*Dawson.*)

(2133.) P. SANGUISORBA, Linn.; Macoun, Cat. III., 519.

Introduced in grass seed in the Township of Massagawga, Halton Co., Ont. June, 1888. (*J. Alston Moffatt.*)

(2134.) **P. annuum,** Nutt.; Macoun, Cat. III., 519.

Abundant in the streets of Victoria, and in fields near Esquimault, Vancouver Island; also in fields at Spence's Bridge, B.C., 1889. (*Macoun.*)

172. ROSA.

(3103.) **R. Engelmanni,** Watson; Gray, Man. ed. VI., 162. (1890.)

Whiskey Island, Lake Huron, shores of Lake Superior, and west to

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the Red River Valley. (*Watson.*) The specimens from Whiskey Island were collected by Dr. John Bell in 1866. Other specimens gathered on Burnt Island, Lake Nepigon, in 1884, are also referred here by Mr. G. N. Best, Rosemount, New Jersey. Mr. Best, however, believes that both the Nepigon specimens and all my specimens of *R. Sayii*, belong to *R. acicularis*, Lindl., or var. *Bourgeauiana*, Crepin.

(2135.) **R. Sayii,** Schwein; Macoun, Cat. III., 520.

Whether this rose retains this name, or is placed under some other, we now know that it is our most northern rose, and extends from the Gulf of St. Lawrence to Lake Mistassini, Severn River, Upper Liard River, and the Lewes River, a branch of the Yukon, in Lat. 62°.

(2138.) For **R. Woodsii,** Wat., read **R. Woodsii,** Lindl.

NOTE.—Mr. G. N. Best, of Rosemount, New Jersey, has examined all our mounted specimens of the genus *Rosa*, and has made a number of changes in our arrangement of specimens under certain species. As he has taken copious notes, and intends to publish them with other notes on roses, we make no changes except in the above instances (*R. Sayii* and *R. Engelmanni*), and in the following: *R. Californica* and *R. micrantha* must be cancelled, the latter going to *R. rubiginosa*, and the specimens retained in Part. III., 520, under the former, are referred doubtfully to *R. pisocarpa*.

174. CRATÆGUS.

(678.) **C. coccinea,** Linn.; Macoun, Cat. I., 147.

Since the publication of Part I. this species has been greatly extended, and now includes much of *C. tomentosa*, Gray, Man., ed. V., 160.

Var. **macracantha,** Dudley; Gray, Man., ed. VI., 165.

C. tomentosa, Macoun, Cat., I., 147, in part.

This includes all *C. tomentosa* from Nova Scotia to west of Manitoba, except specimens from the south-western part of Ontario at Amherstburgh and Point Edward.

Var. **mollis,** Torr. & Gray; Man., ed. VI., 165.

C. subvillosa, Schrad.; Macoun, Cat., I, 147.
C. tomentosa, Linn., var. *mollis*, Gray, Man., ed. V., 160.

Queenston Heights and westward along Lake Erie to Amherstburgh, Ont. (*Macoun.*)

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(3104.) **C. punctata,** Jacq.; Gray, Man., ed. VI., 166. (1890.)

C. tomentosa, var. *punctata*, Gray; Macoun, Cat. I., 147.

All the large fruited, small-leaved forms of *C. tomentosa*, belong here. The *C. Crus-galli* of all localities east of Hamilton, should be referred here, as that species is confined to south-western Ontario.

176. SAXIFRAGA.

(3105.) **S. occidentalis,** Watson, Proced. Amer. Acad., XV., 264.

"Resembling *S. Virginiensis*; leaves often more or less densely rufous tomentose beneath; inflorescence open, glabrous or somewhat glandular-pubescent; calyx free from the pistils, cleft nearly or quite to the base, the segments very obtuse, not reflexed; petals white, oblong-obovate, obtuse; filaments slender; seeds with a loose, smooth testa. From the Rocky Mountains of British America (*Drummond*) to British Columbia." (*Lyall.*) Summit of Mount Finlayson, 10 miles from Victoria; on Mount Arrowsmith, Vancouver Island, altitude 5500 feet; also at Yale and Lytton, B.C., 1889. (*Macoun.*)

(700.) **S. reflexa,** Hook.; Macoun, Cat., I., 152.

On small islands in the entrance to the North Arm of Burrard Inlet, B.C. 1889. (*Macoun.*)

(706.) **S. stellaris,** Linn., var. **comosa,** Poir; Macoun, Cat., I., 153.

Under this we placed, in Part I, *S. foliosa*, R. Br, as a synonym. Specimens since collected in the Selkirk Mountains and Gold Range of British Columbia, are Robert Brown's species, but very far from being *S. stellaris*, var. *comosa*, which is an unbranching form.

(3106.) **S. foliosa,** R. Brown; Torr. & Gray, Fl. I., 570.

"Radical leaves cuneiform, slightly toothed; scapes divided, the branches one-flowered at the summit, and at their base clothed with a cluster of minute fascicled leaves; calyx inferior, obovate; limb of the petals cordate-lanceolate. Seems to be distinct from *S. stellaris* by the dense clusters of little leaves on the scapes, the flowers are few (or none), the obovate calyx, and particularly by the lamina of the equal petals being cordate at the base." (*R. Brown.*) On Bear Creek, Roger's Pass, Selkirk Mountains, and on the Gold Range at Griffin Lake, B.C. (*Macoun.*) Mount Queest, Shuswap Lake, B.C. 1889. (*J. M. Macoun.*)

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178. TOLMIEA.

(717.) **T. Menziesii,** Torr. & Gray; Macoun, Cat. I., 155.

Abundant in rich damp woods at Hastings, and Port Haney, Fraser Valley, B.C., 1889. (*Macoun.*)

180. TIARELLA.

(3107.) **T. laciniata,** Hook., Fl. I., 239; Torr. & Gray, Fl. I., 588.

This species is included in *T. trifoliata* in Watson's Index of the Polypetalæ, but specimens collected on Vancouver Island two years ago satisfy me that they are distinct. They differ as much in habit as in appearance, for while one is at home in the rich woods near the sea, the other is found only on stones in mountain brooks. Besides being laciniate, the leaves are smaller and thinner, of a brighter green, and more delicate in every way. On stones in mountain brooks flowing from Mount Arrowsmith, Vancouver Island. Alt. 2000 feet. 1887. (*Macoun.*)

189. SEDUM.

(3108.) **S. Oreganum,** Nutt.; Torr. & Gray, Fl. I., 559.

Abundant on rocks on a small islet at the head of Horne Lake; also on mounts Mark and Arrowsmith, Vancouver Island, 1887. (*Macoun.*)

192. MYRIOPHYLLUM.

(3109.) **M. alternifolium,** DC.

Julianshaab, Greenland. (*Rosenvinge.*) Lake Memphamagog, Que. July, 1886. (*Dean,* vide *Morong.*)

578. CALLITRICHE.

(3110.) **C. Bolanderi,** Hegelm; Bot. Calif., II., 77.

Abundant in muddy pools at Alberni, and along Somas River, on the west coast of Vancouver Island, 1887; also at Hastings, Port Moody, and Agassiz, B.C. 1889. (*Macoun.*)

(2147.) **C. autumnalis,** Linn.; Macoun, Cat., III., 530.

North of the Saskatchewan. (*Dr. Richardson.*) In pools, Bonaparte

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River, B.C., 1889. (*J. M. Macoun.*) In a pond on the Reservation at Kamloops; and abundant in Griffin Lake, Gold Range, B.C., 1889. (*Macoun.*) Mr. A. Bennett believes that our North American *C. autumnalis* will have to be separated from the European form as a variety.

(3111.) **C. heterophylla,** Pursh; Gray, Man., ed. VI., 182. (1890.)

In flowing water, Moose Jaw Creek, Assiniboia, July 18th, 1880. (*Macoun.*) Mr. A. Bennett states that this is *C. Asagraya*, Hegel. Mon. pl. 3, fig. 9 & pl. 4, fig. 1.

(3112.) **C. hamulata,** Kütz.

In the Spullamachcen River at Enderby, B.C., 1889. (*J. M. Macoun.*) On Mount Mark, Vancouver Island, 1887. The Vancouver Island specimens are without fruit and doubtfully referred to this species by Mr. A. Bennett. (*Macoun.*)

198. CODETIA.

(3113.) G. HISPIDULA, Watson, Bot. California, I., 231.

Introduced on ballast heaps, at Nanaimo, Vancouver Island, 1887. (*Macoun.*)

196. EPILOBIUM.

Many additional species and varieties of *Epilobium* have been added to our flora since the publication of Part III., but our whole series of this genus is now being examined by Prof. Trelease who is unable to report upon them in time to include them in this Part.

204. LYTHRUM.

(822.) **L. Salicaria,** Linn.; Macoun, Cat., I., 175, & III., 539.

Low river bank, Byron, near London, Ont. (*J. A. Balkwill.*)

772. CUPHEA, Jacq.

(3114.) C. VISCOSISSIMA, Jacq.; Gray, Man., ed. VI., 186. (1890.) (Clammy Cuphea.)

In cultivated fields between Hamilton and St. Catherines, Ont.

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206. MENTZELIA.

(3115.) **M. dispersa,** Watson, Bot. California, I., 236.

Abundant at Lytton and Spence's Bridge, B.C., 1889, especially along the railway. (*Macoun.*)

212. HYDROCOTYLE.

(3116.) H. UMBELLATA, Linn., Spec., 234.

On ballast heaps on the coal wharf at Nanaimo, Vancouver Island. Without doubt introduced. (*Macoun.*)

773. CRANTZIA, Nutt., Gen. I., 178.

(3117.) **C. lineata,** Nutt.; C. & R. Rev. of N. Amer., Umbell, 92.

Abundant in saline marshy spots from Nanaimo along the sea shore to the mouth of Nanaimo River; also at the head of James Bay, Victoria, Vancouver Island, 1887. (*Macoun.*)

213. SANICULA.

(836.) **S. Marylandica,** Linn.; C. & R. Rev. of N. Amer., Umbell, 102.

Coulter and Rose give the range of this species only westward to the Rocky Mountains. In Canada it ranges quite across the continent, and is found, though rarely, on Vancouver Island. (*Macoun.*)

Var. **Canadensis,** Torr. Fl. U.S., 302.

S. Canadensis, Linn.; Macoun, Cat., I., 179.

There is now no doubt that this is only a variety of *S. Marylandica,* and references under that species in Part I. belong here.

(3118.) **S. Howellii,** C. & R. Bot. Gazette, XIII., 81.

"Stems coarse, a foot or less high, more or less buried in the sand (or earth), often bearing tufts of stout elongated peduncles and leaves; leaves broad and palmately three to five-lobed (often much modified by by being buried in the sand), the upper inclined to be pinnately lobed, the divisions rather sharply cut and toothed, the teeth mucronate-tipped; umbels unequally few-rayed, with involucre of few leaf-like

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bracts, and involucels of very prominent bractlets, sometimes much exceeding the large globose head of fruit; flowers yellow; fruit short pedicellate, prickly all over, 1½ to 2 lines long, seed face concave." On clay cliffs Beacon Hill, Victoria, Vancouver Island. 1887. (*Macoun.*)

(3119.) **S. Nevadensis,** Watson, Proceed. Amer. Acad. XI., 139.

"Stem slender, sometimes very short, simple, or branching near the base, a foot or less high; leaves ternate, the divisions oblong-ovate, 3 to 5-lobed; the segments lobed or toothed; umbel with about 5 rays, which are sometimes branched and become ½ to 1½ inches long in fruit, involucre of pinnatifid leaf-like bracts, and involucels of small oblong acute bractlets; flowers yellow, the sterile ones pedicelled, fruit prickly all over, 1½ lines long; seed face plane." On dry rocky hills near Victoria and Nanaimo, Vancouver Island, 1887. (*Macoun.*) Thickets, Cadboro Bay, Vancouver Island, 1885. (*Fletcher.*)

215. MUSENIUM.

(842.) **M. trachyspermum,** Nutt.; Torr. & Gray, Fl. I., 642.

References under *M. divaricatum,* Nutt., var. *Hookeri,* Part I., 180, and *M. tenuifolium,* Part I., 180, belong here.

218. CARUM.

(846.) **C. Cairdneri,** Benth. & Hook.; Macoun, Cat., I., 180 & III., 533.

The references given in Parts I. & III. belong only in part to this species; the remainder to the next. North Fork of Old Man River, Alberta. (*Dawson.*) Cypress Hills, Alberta; and very common in thickets at Cedar Hill, Comox, and Alberni, on Somas River, Vancouver Island. 1887. (*Macoun.*)

(3120.) **C. Oreganum,** Watson, Proced. Amer. Acad., XII., 368.

In the dry beds of brooks near the Hand Hills, Alberta; also in a dry thicket near Victoria, Vancouver Island. 1887. (*Macoun.*)

774. ZIZIA, Koch.

(849.) **Z. aurea,** Koch; C. & R. Rev. of N. Amer., Umbell. 127.

Thaspium aureum, Macoun, Cat. I., 181.

Thaspium aureum, var. *apterum,* Gray, Man., ed. V., 195. (1867.)

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All our herbarium specimens of *T. aureum* belong here, but some of the references given in Part I. may belong to the true *T. aureum*.

(3121.) **Z. cordata,** Koch; Hook., Fl. I., 260.

Thaspium trifoliatum, Gray; Macoun, Cat. I, 181, in part.

All the specimens in our possession from the eastern part of the prairie region have been referred here by Coulter and Rose, while those from the base of the Rocky Mountains are placed under *Thaspium*.

220. THASPIUM.

(350.) **T. aureum,** Nutt., var. **trifoliatum,** C. & R. Rev. of N. Amer. Umbell., 83.

T. trifoliatum, Macoun, Cat. I., 181, in part.

The only specimen of this species in our collection is from Kananaskis Station at the eastern base of the Rocky Mountains; collected 1885. (*Macoun.*)

221. CICUTA.

(852.) **C. virosa,** Linn.; Macoun, Cat. I., 182.

To the species, which is wholly a northern form, Coulter and Rose unite *C. maculata* as a variety. It, therefore, becomes—

Var. **maculata,** C. & R., Rev. of N. Amer., Umbell., 130.

C. maculata, Linn.; Macoun, Cat. I., 181.

This includes all the more southern specimens and localities, and crosses the continent to the Pacific coast and Vancouver Island. (*Macoun.*)

Var. **Californica,** C. & R. Rev. of N. Amer., Umbell., 130.

C. Californica, Gray, Proced. Amer. Acad., VII., 344.

Lost Lake, near Cedar Hill, and by ponds near Esquimault, Vancouver Island, 1887. (*Macoun.*)

579. BERULA.

(2150.) **B. angustifolia,** Koch; Macoun, Cat. III., 534.

Abundant in the stream that enters the north-western arm of Lake Okanagan; quite common in a pond on the Reservation at Kamloops, B.C., 1889. (*Macoun.*)

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225. BUPLEURUM.

(857.) **B. Americanum,** C. & R. Rev. of N. Amer. Umbell., 115.
B. ranunculoides, Macoun, Cat., I., 182.

"Radical leaves linear lanceolate; cauline ones very variable, oblong to linear, more or less clasping; rays unequal, ½ to 2 inches long; pedicels short." In general appearance this species resembles the European *B. ranunculoides,* but is distinguished as above. All references in Parts I. & III., belong here. Pelly River, Lat. 61°, N.W.T., 1887. (*Dawson.*)

226. OSMORRHIZA.

(861.) **O. occidentalis,** Torr. Mex. Bound. Rep., 71.
Glycosma occidentalis, Nutt.; Macoun, Cat., I., 183.

This species with others have been united to *Osmorrhiza* by Coulter & Rose, in their late revision.

230. LIGUSTICUM.

(3122.) **L. Grayi,** C. & R., Rev. of N. Amer. Umbell., 88.

"Stems 1 to 2 feet high, with leaves all nearly radical, and glabrous inflorescence; leaves ternate then pinnate; rays, with involucels of several narrowly linear elongated bractlets; rays, 1 to 2 inches long; pedicels 2 to 4 lines long, with short conical stylopodia, and narrow, prominent almost winged ribs; oil-tubes 3 to 5 in the intervals, 8 on the commissural side; seed strongly flattened dorsally, with angled back, and face but slightly concave, with no contral ridge." Very abundant on the summit of the Gold Range at Griffin Lake, B.C., Aug., 1889. (*Macoun.*)

584. ŒNANTHE.

(2206.) **Œ. sarmentosa,** Presl; DC., Prodr. IV., 138; Macoun, Cat. III., 537.

Very common in ditches and marshy places throughout Vancouver Island; also common in the Fraser Valley west of Yale, B.C. (*Macoun.*)

775. CONIOSELINUM, Fisch.

(886.) **C. Canadense,** Torr. & Gray, Fl. I., 619.

References under *Selinum Canadense,* Part I., 184, belong here.

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231. SELINUM.

(867.) **S. Pacificum,** Watson, Proced. Amer. Acad., XI., 140.

Specimens referred here doubtfully, because they were too young, were collected at China or Atlat Creek, and other points along Alberni Canal and Barclay Sound, Vancouver Island, 1887. (*Macoun.*)

(3123.) **S. Dawsoni,** C. & R., Bot. Gazette, XIII., 144.

"A foot or so high, glabrous; leaves ternate, then pinnate, the small ($\frac{1}{4}$ to $\frac{1}{2}$ inch long) ovate acute segments laciniately toothed to entire; umbel, with involucels of linear-oblong scarious bractlets longer than the pedicels, and abruptly ending in a long attenuation; pedicels, 1 to 2 lines long; fruit oblong, smooth, about 2 lines long, with prominent wings, the lateral ones but little broader; rarely an additional small oil-tube in a lateral interval, seed hardly at all dorsally sulcate.

This interesting species is quite distinct from all other species of *Selinum* in its leaf and involucel characters, as well as in the prominent thin wings of the fruit. Pelly River at Pelly Banks. Yukon District, Lat. 61°, Aug. 11th, 1887. (*Dawson.*)

232. ANGELICA.

(869.) **A. genuflexa,** Nutt.; Torr. & Gray, Fl. I., 620; Macoun, Cat. I., 185.

Abundant at Griffin Lake, Sicamous, Agassiz, and other localities to the coast at Burrard Inlet, B.C.; also at Qualicum and Alberni, Vancouver Island. (*Macoun.*)

(871.) **A. atropurpurea,** Linn., Spec., 251.

References under *Archangelica atropurpurea,* Hoffm., Part. I., 185, belong here.

(873.) **A. hirsuta,** Muhl., Cat. ed. II., 30.

References under *Archangelica hirsuta,* Torr. & Gray; Macoun, Cat. I., 186, belong here.

776. CŒLOPLEURUM, Ledeb., Fl. Ross. II., 361.

(872.) **C. Gmelini,** Ledeb.; C. & R. Rev. of N. Amer. Umbell, 90.
Archangelica Gmelini, DC.; Macoun, Cat. I., 186.

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Along both sides of Burrard Inlet, and common on the coast of Vancouver Island; also at Brackley Point, Prince Edward Island. (*Macoun.*)

777. PHELLOPTERUS, Benth., Gen. Plant, I., 905.

(3124.) **P. littoralis,** Schmidt; C. & R. Rev, of N. Amer. Umbell., 81.

Lying prostrate on the sandy beach at Fuller's Farm, Oak Bay, near Victoria, Vancouver Island, 1887. (*Macoun.*)

778. PASTINACA, Linn., Gen. No. 362.

(882.) P. SATIVA, Linn.; C. & R. Rev. N. Amer. Umbell., 49.

References under *Peucedanum sativum*, Part I., 187, belong here.

235. PEUCEDANUM.

(878.) **P. ambiguum,** Nutt.; Torr. & Gray, Fl. I., 626.

On dry hills at Lytton, Yale, Stump Lake, Kamloops and Sicamous, B.C., 1889. (*Macoun.*)

(3125.) **P. eurycarpum,** C. & R., Rev. of N. Amer. Umbell., 61.

P. macrocarpum, var. (?) *eurycarpum*, Gray; Macoun, Cat. III., 536.

On the hills, on the north side of Kicking Horse River, at Golden, Columbia Valley, 1885; quite common at Spence's Bridge, and on the arid hills along the Thompson River to Lytton, B.C. (*Macoun.*)

(877.) **P. triternatum,** Nutt.; Torr. & Gray, Fl. I., 626.

On rocks at Lytton, and along the Fraser River above it, 1889. (*Macoun.*)

(3026.) **P. nudicaule,** Nutt.; Torr. & Gray, Fl. I., 627.

Open prairie, Souris Co., Man., 1889. (*T. Walker.*)

(2154.) **P. villosum,** Nutt.; Watson, King's Rep., V., 131.

Moose Mountain, Assiniboia, 1884. (*J. M. Macoun.*) Moist banks, Souris Co., Man., 1889. (*T. Walker.*)

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(2155.) **P. Sandbergii,** C. & R., Bot. Gazette, XIII., 79.

P. ——— ? No. 2155, Macoun, Cat. III., 536.

"Caulescent, branching at base, an inch or two to a foot high, from an elongated slender root, rough puberulent; petioles wholly inflated, with a very conspicuous white scarious margin; leaves ternately or pinnately dissected, the ultimate segments very short linear; umbel very unequally, 6 to 15-rayed, with involucels of distinct linear-lanceolate bractlets; rays, 1 to 4 inches long; pedicels, a line or two long; flowers, bright yellow; fruit, ovate, puberulent, 2 to 2½ lines long, 1½ lines broad, with very narrow wings, and filiform dorsal and intermediate ribs; oil-tubes, 4 or 5 in the intervals, 6 on the commissural side; seed-face, plane." North and South Kootanie passes and summit of Crow Nest Pass, Rocky Mountains. (*Dawson.*)

(3127.) **P. Martindalei,** C. & R., var. **augustatum,** C. & R., Bot. Gazette, XIII., 143.

"Usually more caulescent than the species and sometimes taller, with more dissected leaves, and wings of fruit about half a line wide, making a fruit about 2 lines wide."

Summit of Mount Mark, altitude 3300 feet; and Mount Arrowsmith, altitude 5500 feet, Vancouver Island, 1887. (*Macoun.*)

237. LEPTOTÆNIA, Nutt., Torr. & Gray, Fl. I., 629.

(884.) **L. dissecta,** Nutt.; Torr. & Gray, Fl. I., 630.

Ferula dissoluta, Watson; Macoun, Cat. I., 188.

Câche Creek Mountain, B.C. (*Macoun.*)

(885.) **L. multifida,** Nutt.; Torr. & Gray, Fl. I., 630.

Ferula multifida, Gray; Macoun, Cat. I., 188.

On dry hillsides at Sicamous, Kamloops, Spence's Bridge and Lytton, B.C., 1889. (*Macoun.*)

239. TIEDEMANNIA, DC.

(888.) **T. rigida,** C. & R., Rev. of N. Amer. Umbell., 64.

References under *Archemora rigida,* Part I., 188, belong here.

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242. CORNUS.

(3128.) **C. Baileyi,** Coulter & Evans, Bot. Gaz., XV., 37.

C stolonifera, Macoun, Cat. I., 190, in part.

"Erect shrub, with reddish-brown, mostly smooth branches; branchlets and inflorescence pubescent to woolly; petioles 6 to 25 mm. long; leaves from lanceolate to ovate, acute or short-acuminate, acute or obtuse at base, appressed-pubescent to glabrate above, white beneath, and with woolly hairs variously intermingled with appressed ones (or in some cases all appressed), 2·5 to 12 cm. long, 1·2 to 7·5 cm. wide; flowers in small, rather compact cymes; calyx-teeth from small to prominent; fruit white; stone decidedly compressed, flat-topped, rarely oblique, with a very prominently furrowed edge, much broader than high (3 mm. high, 4 to 6 mm. broad)."

Low grounds at the mouth of Nepigon River, Lake Superior; "River That Turns," near the source of the Qu'Appelle River, Assiniboia (*Macoun*); Cypress Hills, Alberta. (*J. M. Macoun.*) North Fork of Old Man River, Rocky Mountains. (*Dawson.*) Probably common between Lake Superior and the Rocky Mountains. (*Macoun.*)

245. SAMBUCUS.

(3129.) **S. glauca,** Nutt.; Torr. & Gray, Fl. II., 13.

In the vicinity of Victoria, Vancouver Island, 1885. (*Fletcher.*) Abundant along the Cowichan River and at Nanaimo, Vancouver Island; also at Agassiz, B.C. (*Macoun.*)

248. SYPMHORICARPUS.

(3130.) **S. mollis,** Nutt.; Torr. & Gray, Fl. II., 4.

Quite common on dry, gravelly hills at Goldstream and Nanaimo, Vancouver Island, 1887; also on gravel at Yale and Agassiz, B.C., 1889. (*Macoun.*)

258. VALERIANELLA. Tourn.

The above generic name is substituted for *Plectritis,* Part II., 205, & III., 501.

(3131.) **V. anomala,** Gray, Proced. Amer. Acad., XIX., 83.

On gravelly slopes near Nanaimo, Vancouver, 1887. (*Macoun.*)

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262. EUPATORIUM.

(959.) **E. purpureum,** Linn.; Gray, Man., ed. VI., 239. (1890.)

The type of this species has been collected both at Hamilton and London, Ont., by T. J. Burgess, M.D. It is probable that the spotted stem is only a trivial variation.

267. GRINDELIA.

(3132.) **G. nana,** Nutt.; Gray, Synop., Fl. II., 119.

In dry open woods at Qualicum, Vancouver Island, 1887. (*Macoun.*)

Var. **discoidea,** Gray, Synop. Fl. II., 119.

A rayless state of the species gathered on the dry mountain slopes at Goldstream, Vancouver Island, 1887. (*Macoun.*)

Other specimens were collected that are doubtfully referred to *G. integrifolia.* It is quite evident that we have two species on the coast of Vancouver Island that have been included in Gray's Synoptical Flora in the above mentioned species. In one series all the forms have entire leaves; but they vary much in size, and are from glabrous to tomentose.

Another series, with serrate leaves, stout stems and almost smooth in every part, is also included.

779. BOLTONIA, L'Her.

(3033.) **B. asteroides,** L'Her.; Gray, Synop. Fl. II., 166.

In moist places, Souris Co., Man., 1889; apparently very rare. (*T. Walker.*)

(3034.) **B. latisquama,** Gray, var. **occidentalis,** Gray, Synop. Fl. II., 166.

Rich, damp soil, 15 miles west of Winnipeg, Man., 1886. (*Fletcher.*)

275. ASTER.

(1022.) **A. radulinus,** Gray; Macoun, Cat. II., 220.

On the summit of Mount Finlayson, and at Horne Lake, Vancouver Island, 1887. (*Macoun.*) The specimens referred to this species in Part II., 220, belong to *A. conspicuus.*

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(1039.) **A. campestris,** Nutt.; Macoun, Cat. II., 224.
Guichon Creek, Nicola Valley, B.C., 1888. (*Dawson.*)

(1046.) **A. Novi-Belgii,** Linn., var. **litoreus,** Gray, Synop. Fl. II., 189.

Salt marsh, and along the bridge that crosses it, near Shaw's Hotel, Brackley Point, Prince Edward Island, 1888. (*Macoun.*)

(3135.) **A. patulus,** Lam.; Gray, Man., ed. VI., 262.

New Brunswick. (*Gray, Man.*) We have never seen this species, and would be glad if New Brunswick botanists could detect it.

(2171.) **A. Tradescanti,** Linn.; Macoun, Cat. III., 545.

This species differs from *A. paniculatus* in having its leaves (chiefly) linear and tapering to a long slender point. Probably common throughout Ontario, but confounded with *A. paniculatus.* Quite common at Hull, Que., and Casselman, 29 miles from Ottawa. (*Macoun.*) Not uncommon at Ottawa. (*W. Scott.*)

(2173.) **A. occidentalis,** Nutt.; Macoun, Cat. III., 546.

In various forms and very abundant along lakes and streams in all parts (visited) of Vancouver Island; also at Shuswap Lake, B.C. (*Macoun.*)

(1049.) **A. puniceus,** Linn., var. **lucidulus,** Gray, Synop. Fl. II., 195.

Rivière du Loup, Q. Aug., 1889. (*St. Cyr.*)

Var. **lævicaulis,** Gray, Synop., Fl. II., 195.

References under *A. puniceus,* var. *firmus,* Part II., 226, belong here.

(1053.) **A. peregrinus,** Pursh; Macoun, Cat. II., 226.

In crevices of rocks at the summit of Mount Arrowsmith, Vancouver Island, 1887; alt. 5900 feet. (*Macoun.*)

(1054.) **A. foliaceus,** Lindl., var. **Eatoni,** Gray, Synop. Fl. II., 194.

Not uncommon on King's Farm at Cedar Hill, near Victoria, Vancouver Island, 1887. (*Macoun.*)

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Var. **pubescens,** Gray, l.c..

Salt marshes, along Barclay Sound, amongst the islands near Cape Beale, Vancouver Island, 1887. (*Macoun.*)

(1067.) **A. subulatus,** Michx., Fl. II., 111.

In salt marshes along the outer sands of Brackley Point, Prince Edward Island, 1888. (*Macoun*). In Part II., 229, under this number I placed a specimen collected along the coast of Lake Huron, but it is more likely a form of *A. paniculatus.*

276. ERIGERON.

(2177.) **E. flagellaris,** Gray; Macoun, Cat. III., 548.

Better specimens have been collected at Spence's Bridge, B.C., by Mr. James Fletcher, since the publication of Part III., and competent authorities have referred them to this species.

780. PSILOCARPHUS, Nutt.

(3136.) **P. Oreganus,** Nutt., var. **elatior,** Gray, Synop. Fl. II., 228.

Quite common in ditches that dry up in summer, at Cloverdale and Cedar Hill, near Victoria, Vancouver Island, 1887. (*Macoun.*)

(3137.) **P. tenellus,** Nutt.; Gray, Synop. Fl. II., 228.

Abundant in ditches at Cloverdale, Vancouver Island, 1887. (*Macoun.*)

295. BIDENS.

(3138.) **B. bullata,** Linn. ?

Along the Somas River between Alberni and Sproat Lake, on the west side of Vancouver Island, 1887. Doubtfully referred here by Dr. Watson. (*Macoun.*)

781. HELIANTHELLA, Torr. & Gray.

(3139.) **H. Douglasii,** Torr. & Gray, Fl. II., 334.

Mountains between Nicola Valley and Niacomen, B.C., 1888. (*Dawson.*) Abundant on the mountains between the Nicola River and the Thompson, south of Spence's Bridge, B.C., 1889. (*Macoun.*) Mountains north-west of Spence's Bridge. (*J. M. Macoun.*)

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311. ARTEMISIA.

(3040.) A. ANNUA, Linn.; Gray, Synop. Fl. II., 370.

Introduced at London, Ont., and inclined to spread. (*Burgess.*) Vacant lots, West Toronto, Ont. (*Macoun.*)

(1192.) **A. glauca,** Pall.; Macoun, Cat. II., 255.

On the open prairie, Souris Co., Man., 1889. (*T. Walker.*)

312. LUINA.

(1212.) **L. hypoleuca,** Benth.; Macoun, Cat. II., 259.

Very abundant in crevices of rock on Mount Mark, altitude 2000 feet; also on the sea-cliffs of the Alberni Canal, west side of Vancouver Island, 1887. (*Macoun.*) Crevices of water-worn rocks in a canyon of the Kokesaila River, about 50 miles from Victoria on the Nanaimo Railway, Vancouver Island. (*Anderson.*)

318. SENECIO.

(1230.) S. SYLVATICUS, Linn.; Macoun, Cat. II., 263.

Waste places on Shaw's Farm, Brackley Point, Prince Edward Island, 1888; cultivated ground, Burrard Inlet, at Hastings, B.C., 1889. (*Macoun.*)

(1237.) **S. aureus,** Linn., var. **subnudus,** Gray, Synop. Fl. II., 391.

Western summit of the North Kootanie Pass, Rocky Mountains. 1883. (*Dawson.*)

319. CACALIA.

(1249.) **C. tuberosa,** Nutt.; Macoun, Cat. II., 268.

Plentiful on the banks of the Maitland River, near Clinton, Ont. (*J. Dearness.*)

320. TETRADYMIA.

(1250.) **T. canescens,** DC.; Macoun, Cat. II., 268.

On rocky hillsides, Kamloops, B.C. (*Prof. Fowler.*) Amongst rocks to the west of Kamloops, on both sides of the Thompson River, B.C., 1889. (*Macoun.*) On the North Thompson, 20 miles north of Kamloops, 1889. (*J. M. Macoun.*)

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782. SILYBUM, Gærtn. (MILK THISTLE.)

(3141.) S. MARIANUM, Gærtn.; Gray, Synop. Fl. II., 405.

Gosnell's Cove, near Kingston, Ont. (*T. Walker.*) Along the seashore at Oak Bay, Victoria, and at Nanaimo, Vancouver Island. (*Macoun.*) Escaped from gardens.

326. CENTAUREA.

(3142.) C. CALCITRAPA, Linn.; Gray, Synop. Fl. II., 406. (Star Thistle.)

Introduced in ballast at Nanaimo, Vancouver Island. 1887. (*Macoun.*)

(3143.) C. MELITENSIS. Linn.; Gray, Synop. Fl. II., 406.

Introduced. On dry knolls and rocky ledges at Esquimault; also on ballast heaps at Nanaimo, Vancouver Island, 1887. (*Macoun.*)

(3144.) C. JACEA, Linn.; Gray, Synop. Fl. II., 407.

In meadows at Cedar Hill, Victoria, Vancouver Island, 1887. Introduced. (*Macoun.*)

331. CREPIS.

(3145.) C. BIENNIS, Linn.; Gray, Synop. Fl. II., 430.

Naturalised in fields at Cedar Hill and Somenos, Vancouver Island, 1887. (*Macoun.*)

(1283.) C. VIRENS, Linn.; Macoun, Cat. II., 274.

Cowichan River and in woods at Chemanos, Vancouver Island, 1887. (*Macoun.*)

332. HIERACIUM.

(2188.) H. AURANTIACUM, Linn.; Macoun, Cat. III., 551.

Hamilton Road, east of London, Ont. (*J. Dearness.*)

(1284.) H. PILOSELLA, Linn., var. PELETERIANUM, Mer.

Very common along roadsides, covering the backs of the dykes and the borders of the fields in many parts of Prince Edward Island. Completely naturalized. (*Macoun.*)

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(1293.) **H. paniculatum,** Linn.; Macoun, Cat. II., 276.

In woods, western Ontario. (*J. Dearness.*)

(3146.) H. ——— ?

A tall, coarse plant, with the general appearance of *Crepis*, growing in clumps. The whole stem is more or less covered with dark hairs, which increase so much on the peduncles and bracts as to make them very dark colored. Leaves with only occasional teeth, rough, with hispid hairs, which are more numerous on the under side, mid-rib broad and white; radical leaves nearly a foot long, tapering into the petiole. Naturalized in meadows at Cedar Hill, Victoria, Vancouver Island, 1887. (*Macoun.*)

(3147.) **H. cynoglossoides,** Arvet.; Gray, Synop. Fl. II., 428.

A tall species over three feet high, quite smooth and glaucous, except a few bulbous hairs at the base; leaves entire, lanceolate, not clasping; panicle like *Crepis virens;* involucre almost black, covered with appressed glandular hairs. Collected 40 miles up the North Thompson, beyond the settlements extending from Kamloops, B.C., June, 1889. (*J. M. Macoun.*) Dr. Britton suggests the above name, but the specimen in our herbarium from Howell is unlike this.

346. CAMPANULA.

(3148.) **C. aurita,** Greene, Pittoniana, I., Part V., 221, 1888.

"Root perennial; stems several, a span high, erect, slender, leafy, one-flowered; the whole plant pale and minutely scabrous; leaves an inch long, oblong, lanceolate, acute, sessile by a narrow base, entire or with a few coarse teeth; segments of the calyx lanceolate, each with a pair of erect lobes or teeth at or near the base; corolla violet, $\frac{3}{4}$ inch long, cleft to some distance below the middle, the segments lanceolate, widely spreading."

A well-marked and interesting species obtained on the table-lands of the Yukon River, Alaska, Latitude 63°, late in August, 1881, by Mr. Octavius S. Bates. (*Greene.*)

(1344.) **C. rotundifolia,** Linn., var. **arctica,** Lange.; Macoun, Cat. III., 560.

Greenland, Lat. 71°, 1888. (*Hanson.*) Little Charlton Island, James Bay, July, 1887. (*J. M. Macoun.*) All the northern specimens

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are distinguished by having reflexed, white hairs on the lower part of the stem.

Var. **Alaskana,** Gray, Synop. Fl. I., 395.

Mount Mark, near Qualicum, Vancouver Island, 1887. Alt. 2500 ft. (*Macoun.*)

Var. **hirsuta.**

A slender, narrow-leaved variety, with the lower part of stem covered with stiff reflexed hairs. Flowers 1-5, smaller than in the species. Shores of Horne Lake, near Qualicum, Vancouver Island, 1887. (*Macoun.*)

347. HETEROCODON.

(1348.) **H. rariflorum,** Nutt.; Macoun, Cat. II., 289.

Rather common on the oak pasture lands at Cloverdale and Cedar Hill, near Victoria, Vancouver Island, 1887. (*Macoun.*)

349. VACCINIUM.

(1356.) **V. uliginosum,** Linn., var. **mucronatum,** Herder; Macoun, Cat. II., 291.

Crevices of rocks, summit of Mount Arrowsmith, Vancouver Island, alt. 5700 feet, July, 1887. (*Macoun.*)

(3149.) **V. occidentale,** Gray, Synop. Fl. I., 23.

Amongst rocks on the slopes of Mount Mark, alt. 2500 feet, near Qualicum, Vancouver Island, July, 1887. (*Macoun.*)

350. OXYCOCCUS.

(1365.) **O. vulgaris,** var. **intermedium,** Gray, Synop. Fl. I., 396.

Along the swampy margin of Langford Lake, near Goldstream, Vancouver Island, 1887. (*Macoun.*)

353. ARCTOSTAPHYLOS.

(1371.) **A. tomentosa,** Dougl.; Macoun, Cat. II., 295.

Growing in large bushes on the summit of Mount Erskine, altitude 1200 feet, Salt Spring Island, Gulf of Georgia; also on Mount Finlay-

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son and other mountains at Goldstream; and on the ridge at the "Old Mine," near the head of Chase River, and on Mount Benson. Nanaimo, Vancouver Island, 1887. (*Macoun.*)

354. GAULTHERIA.

(1373.) **G. ovatifolia,** Gray; Macoun, Cat. II., 295.

Cascade Mountains, British Columbia. (*Gray.*) In alpine woods on Mount Arrowsmith, Vancouver Island, alt. 4500 feet, 1887; also at Sicamous in the Gold Range, B.C., 1889. (*Macoun.*)

363. LEDUM.

(1397.) **L. glandulosum,** Nutt.; Macoun, Cat. II., 301 & III., 562.

Plateau north of Tranquille River, alt. 5000 feet; plateau north of Nicola River, alt. 6000 feet, B.C., 1889. (*Dawson.*)

366. CLADOTHAMNUS.

(1408.) **C. pyrolæflorus,** Bong.; Macoun, Cat. II., 303.

Mountain near Sumas Lake, 1884. (*Bowman.*) Lake Karmutzen, Vancouver Island, 1885. (*Dawson.*) Wooded slopes, Mount Arrowsmith, Vancouver Island, alt. 5500 feet, 1887. (*Macoun.*)

368. MONESES.

(1416.) **M. grandiflora,** Salisb., Gray, Man., ed. VI., 323.

References under *M. uniflora*, Part II., 306, belong here.

369. CHIMAPHILA.

(1418.) **C. Menziesii,** Spreng.; Macoun, Cat. II., 306.

Shady woods along the Little Qualicum River, and common on the lower slopes of Mount Arrowsmith, Vancouver Island, 1887. (*Macoun.*)

(1419.) **C. maculata,** Pursh; Macoun, Cat. II., 306.

In woods at Plover Mills, Ont. (*R. Elliott.*)

371. ALLOTROPA.

(1421.) **A. virgata,** Torr. & Gray; Macoun, Cat. II., 307.

Quite common in gravelly soil everywhere around Goldstream and in woods at Nanaimo, Vancouver Island, 1887. (*Macoun.*)

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373. HIPOPITYS.

(3150.) **H. fimbriata,** Gray, Proced. Amer. Acad., VIII., 629.

Quite common in coniferous woods along the Little Qualicum River and on the slopes of mounts Mark and Arrowsmith, Vancouver Island, 1887. (*Macoun.*)

377. PRIMULA.

(1430.) **P. Sibirica,** Jacq.; Macoun, Cat. II., 310.

Sea shore below high-water mark, west coast of Hudson Bay, Aug., 1886. (*J. M. Macoun.*)

(3151.) **P. Egaliksensis,** Hornem.; Gray, Synop. Fl. I., 399.

Shore of Charlton Island, James Bay, July, 1887. (*J. M. Macoun.*)

380. DODECATHEON.

(3152,) **D. frigidum,** Cham. & Schlecht.; Gray, Bot. Gaz., XI., 233.

D. Meadia, Linn., var. *frigidum,* Macoun, Cat. II., 312.

Crevices of rocks, summit of Mount Arrowsmith, alt. 5700 feet, Vancouver Island, 1887. (*Macoun.*)

(3153.) **D. Hendersoni,** Gray, Bot. Gaz., XI., 233.

D. Meadia, Linn., var. *macrocarpum,* Macoun, Cat. II., 312.

References credited, in Part II., to *Dawson, Hill, Fletcher* and *Macoun,* belong here.

(3154.) **D. Jeffreyi,** Moore; Gray, Bot. Gaz., XI., 232.

D. Meadia, Linn., var. *lancifolium,* Macoun, Cat. II., 312.

On an island in the Fraser at Kanaka Bar, B.C. (*Hill.*) Abundant on mountains at Lytton, and Spence's Bridge, B.C., 1889. (*Macoun.*)

386. CENTUNCULUS.

(1453.) **C. minimus,** Linn.; Macoun, Cat. II., 315.

In boggy places, at Mount Stewart and Brackley Point, Prince Edward Island; in a pond on the Indian Reservation at Kamloops, B.C.; quite common at Sproat Lake and Alberni, on the west coast of Vancouver Island. (*Macoun.*)

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783. VINCA, Linn. (PERIWINKLE.)

(3155.) V. MINOR, Linn.; Hooker, Student's Flora, 268.

Escaped from gardens to roadsides at Kingston, Ont. (*T. Walker.*)

391. ASCLEPIAS.

(1466.) **A. speciosa,** Torr.; Macoun, Cat., II., 319.

Very common in the valley of the Thompson River, B.C., from Shuswap Lake to Lytton, on gravel benches and amongst sand, 1889. (*Macoun.*)

394. GENTIANA.

(1488.) **G. glauca,** Pall.; Macoun, Cat., II., 323.

Quite common on the summit of the Gold Range, north of Griffin Lake, B.C., altitude 7000 feet, 1889. (*Macoun.*)

(1492.) **G. sceptrum,** Griseb.; Macoun, Cat., II., 323.

In Westwood's swamp at the base of Mount Benson and in small swamps at Departure Bay, Nanaimo, and at Sproat Lake, Alberni, Vancouver Island; also on Lulu Island at the mouth of the Fraser River, B.C., 1889. (*Macoun.*)

(1499.) **G. linearis,** Frœl., var. **latifolia,** Gray, Proced. Amer. Acad., XIV., 309.

This variety differs from the var. *lanceolata*, Part II., 325, in having broad leaves, less tapering at the base and being more like a form of *G. alba* than *G. linearis*. Ten or twelve miles north of St. Stephen, Charlotte Co., N.B. (*Vroom.*) Kaministiquia River at Fort William, west of Lake Superior, 1889. (*Dr. Britton.*) The references to *G. alba* in Part II., 324, all, or nearly all, belong here. In Gray's Man., ed. VI., 351, the flowers are said to be blue. None of our specimens are that color, and the type of the variety was not blue.

Var. **lanceolata,** Gray; Macoun, Cat., II., 325.

Along Rupert River, between Lake Mistassini and James Bay, N.E.T., 1885. (*J. M. Macoun.*)

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784. ERYTHRÆA, Richard. (CENTUARY.)

(3156.) E. CENTAURIUM, Pers.; Gray, Man., ed. VI., 347. (1890.)

Sandy wastes on Sable Island off the coast of Nova Scotia. Collected July, 1870. (*Mrs. Almond.*)

403. COLLOMIA.

(3157.) **C. grandiflora,** Dougl.; Gray, Synop. Fl. I., 135.

On grassy banks at Port Moody, B.C., 1885. (*A. J. Hill.*) Abundant in cultivated fields at Cedar Hill, near Victoria, Vancouver Island, 1887. (*Macoun.*)

(1521.) **C. gracilis,** Dougl.; Macoun, Cat. II., 329.

On gravel banks, Coldwater River, and mountains south of Tulameen River; altitude 6000 feet, B.C. (*Dawson.*) Gravel banks along the Fraser and Thompson rivers from Yale to Kamloops, B.C.; common on dry, rocky or gravelly soil at Goldstream, Nanaimo and Qualicum, Vancouver Island. (*Macoun.*) Lytton, B.C. (*Fletcher.*)

(1522.) **C. heterophylla,** Hook.; Macoun, Cat. II., 329.

Very common on open slopes on all the mountains at Goldstream, and along the Nanaimo Railway, at many points, to Nanaimo, Vancouver Island; rocky hills at Yale, B.C., 1889. (*Macoun.*)

404. GILIA.

(1523.) **G. linifolia,** var. **pharnaceoides,** Gray; Macoun, Cat. II., 329.

Twenty miles up the North Thompson. (*J. M. Macoun.*) On hard baked earth, where water had stood in spring, in low spots, on the north side of the Thompson River, at Kamloops, B.C., 1889. (*Macoun.*)

(1527.) **G. aggregata,** Spreng.; Macoun, Cat. II., 330.

Five miles south of Allison's, Similkameen, B.C., Aug. 1888. (*Dawson.*) Amongst gravel at Penticten, at the southern end of Lake Okanagan, B.C., 1889. (*Macoun.*)

(3158.) G. CORONOPIFOLIA, Pers.; Gray, Synop. Fl. I., 145. (Standing Cypress.)

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A garden escape. On a gravelly knoll by a roadside near Port Dover, Norfolk Co., Ont., Aug. 1888. (*A. W. Henshaw.*) There is no doubt but this is a garden escape, as it is often cultivated.

(1529.) G. CAPITATA, Dougl.; Macoun, Cat. II., 330.

South of Shawnigan Lake, along the Nanaimo Railway, Vancouver Island; gravelly slope at Sicamous, B.C., 1889. (*Macoun.*)

(3159.) G. ACHILLEÆFOLIA, Benth.; Gray, Synop. I., 147.

On the Nanaimo Railway, near Shawnigan Lake, Vancouver Island, 1887. (*Macoun.*) It is probable that both the above species have been introduced with grain from Oregon.

406. HYDROPHYLLUM.

(3160.) **H. occidentale,** Gray, var. **Fendleri,** Gray, Synop. Fl. I., 154.

Grassy slopes, north-west of Spence's Bridge, altitude 3500 feet, B.C., 1889. (*J. M. Macoun.*)

(1535.) **H. capitatum,** Dougl.; Macoun, Cat. II., 331.

On mountains north-west of Spence's Bridge, B.C. (*J. M. Macoun.*)

(1536.) **H. Virginicum,** Linn.; Macoun, Cat., II., 331, & III., 567.

Not uncommon in the valley of Goldstream, near Victoria, Vancouver Island, between the hotel and the sea, 1887. (*Macoun.*)

407. NEMOPHILA.

(3161.) **N. Menziesii,** Hook. & Arn.; Gray, Synop. Fl. I., 156.

Abundant on gravel on Cedar Hill and Mount Tolmie, near Victoria, Vancouver Island, 1887. (*Macoun.*)

410. ROMANZOFFIA.

(1546.) **R. Sitchensis,** Bong.; Macoun, Cat. II., 334.

On stones in the stream that flows from Mount Arrowsmith into Cameron Lake, Vancouver Island, about three miles from the lake, July, 1887. (*Macoun.*)

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412. PECTOCARYA.

(1548.) **P. penicillata,** A. DC.; Macoun, Cat., II., 334.
Quite common in dry soil at Spence's Bridge, B.C., 1889. (*Macoun.*)

413. CYNOGLOSSUM.

(2195.) **C. occidentale,** Gray; Macoun, Cat., III., 567.
In a piece of thick, damp, woods at Vernon, B.C., 1889. (*Macoun.*)

414. ECHINOSPERMUM.

(3162.) **E. hispidum,** Gray, Synop. Fl. I., 422.
On damp spots along the railway at Spence's Bridge, B.C. (*Fletcher, Macoun.*)

We follow Dr. Gray in the Supplement to his Synoptical Flora, Vol. II., Part I., 422, in changing the genus *Eritrichium*, Schrad., into the following genera:—

785. OMPHALODES, Tourn.

(1558.) **O. nana,** Gray, Proced. Amer. Acad., XX., 262.
Eritrichium nanum, var. *aretioides,* Herder.; Macoun, Cat. II., 336.
The varieties are included in the species by Dr. Gray.

786. KRYNITZKIA, Fisch. & Meyer.

(1559.) **K. plebeia,** Gray, Proced. Amer. Acad., XX., 266.
Eritrichium plebeium, A. DC.; Macoun, Cat. II., 337.

(1560.) **K. Californica,** Gray, Proced. Amer. Acad., XX., 266.
Eritrichium Californicum, DC.; Macoun, Cat. II., 337.
Along the Somas River, Alberni, Vancouver Island. 1887. (*Macoun.*)

(1561.) **K. Chorisiana,** Gray, Proced. Amer. Acad., XX., 267.
Eritrichium Chorisianum, DC.; Macoun, Cat. II., 337.
All the specimens collected around Victoria by *Hill, Fletcher* and *Macoun* are of this species. The reference in Part III., 568, is to the Lytton specimens.

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(1562.) **K. Scouleri,** Gray, Proced. Amer. Acad., XX., 267.
Eritrichium fulvum, A. DC.; Macoun, Cat. II., 337.
E. Scoulcri, A. DC.; Macoun, Cat. III., 568.
Vicinity of Victoria, Vancouver Island, 1885. (*Fletcher.*) Wet spots, "Half-way House," Nanaimo, Vancouver Island. 1887. (*Macoun.*)

(1564.) **K. leiocarpa,** Fisch. & Meyer; Gray, Proced. Amer. Acad., XX., 270.
Eritrichium leiocarpum, Watson; Macoun, Cat. II., 337.
Little Shuswap Lake, B.C. 1889. (*Macoun.*)

(1565.) **K. crassisepala,** Gray, Proced. Amer. Acad., XX., 268.
Eritrichium crassisepalum, Torr. & Gray; Macoun, Cat. II., 337.
This has not been collected of late years.

(2198.) **K. circumscissa,** Gray, Proced. Amer. Acad., XX., 275.
Eritrichium circumscissum, Gray; Macoun, Cat. III., 568.
On very dry slopes at Spence's Bridge, B.C. 1889. (*Macoun.*)

(1566.) **K. glomerata,** Gray, Proced. Amer. Acad., XX., 279.
Eritrichium glomeratum, DC.; Macoun, Cat. II., 337.
This only includes the type and synonyms. The prairie specimens are chiefly of this species.

(3163.) **K. sericea,** Gray, Proced. Amer. Acad., XX., 279.
Eritrichium glomeratum, DC., var. *humile*, Gray; Macoun, Cat. II., 338.
Specimens chiefly from the foot-hills of the Rocky Mountains, belong here.

(1567.) **K. leucophæa,** Gray, Proced. Amer. Acad., XX., 279.
Eritrichium leucophæum, A. DC.; Macoun, Cat. II., 338.
Not yet found by Canadian collectors.

787. PLAGIOBOTHRYS, Fisch. & Meyer.

(1563.) **P. tenellus,** Gray, Proced. Amer. Acad., XX., 281.
Eritrichium tenellum, Gray; Macoun, Cat. II., 337, & III., 568.
Mount Tolmie, near Victoria, Vancouver Island. 1887. (*Macoun.*)

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(3164.) **P. Torreyi,** Gray, Proced. Amer. Acad., XX., 281.

Eritrichium Torreyi, Gray; Macoun, Cat. III., 568.

The specimens from Lytton, referred here, are correct. Abundant at Spence's Bridge, B.C. 1889. (*Macoun.*)

418. MYOSOTIS.

(1577.) M. PALUSTRIS, With.; Macoun, Cat. II., 340.

In wet places along the Fraser River at Lulu Island, B.C. 1889. (*Macoun.*)

428. SOLANUM.

(1608.) S. NIGRUM, Linn., var. VILLOSUM, Mill.; Gray, Synop. Fl. I., 228.

On ballast heaps at Nanaimo, Vancouver Island, 1887; waste places around Kamloops, B.C. 1889. (*Macoun.*)

Var. **nodiflorum,** Gray, Synop. Fl. I., 228.

In wheat fields at Agassiz, B.C. 1889. Possibly introduced. (*Macoun.*)

439. COLLINSIA.

(1635.) **C. parviflora,** Dougl.; Macoun, Cat. II., 453, & III., 570.

Guichon Creek, B.C.; Glenora, Stikine River, B.C. 1887. (*Dawson.*) Agassiz, B.C., 1889; also on Cedar Hill, Vancouver Island. (*Macoun.*)

440. SCROPHULARIA.

(1636.) **S. nodosa,** Linn., var. **Marilandica,** Gray, Man., ed. VI., 380; Macoun, Cat. II., 354, in part.

In the edition of the manual just cited, only one form of this species is described. As we have two forms of it, that were recognized and described by Pursh, Fl. II., 419, I now reproduce them, and append to the description of Pursh that of Mr. J. Dearness, Public School Inspector of London, Ont., who first drew my attention to them, and who has grown them side by side for three years.

Leaves cordate rounded, at the base acutely serrate; petioles ciliate at the base; panicle fasciculate loose-flowered; flowers, greenish brown. The whole plant often four feet high. In flower from June to August. (*Pursh.*) Leaves ovate to ovate-lanceolate above; broad at base cordate

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to round, about equally deeply serrate. Flowers, lurid olive to brown. Usually solitary. Less than a foot high on 21st May, 1889. Time of flowering, August, September, October. (*Dearness.*) Damp river bank at London, Ont. (*Burgess, Millman, Dearness.*)

(3165.) **S. lanceolata,** Pursh, Fl. II., 419.

Leaves lanceolate, unequally serrate, the serratures acuminate, acute at the base; petioles naked; panicle corymbose-fasciculate. Flowers, greenish yellow. In flower from August to September. (*Pursh.*) Leaves lanceolate from lowest to highest; deeply and unequally serrate or toothed; acute at the base. Flowers green, tinged slightly with yellow. In flower June and July. Six or eight strong stalks from a horizontally spreading root. Four feet high on 21st May, 1889. (*Dearness.*) Vicinity of Belleville, Ont. (*Macoun.*) Biddulph Township, Middlesex Co., Ont. (*Dearness.*)

(3166.) **S. Californica,** Cham.; Gray, Synop. Fl. I., 258.

The specimens referred here have the stems puberulent, with appressed hairs, which pass in the upper part of the stem and inflorescense into stalked glands. The leaves, however, are more like *S. nodosa*, var. *Marilandica*, not being deeply serrate. China Creek, Alberni Canal, Vancouver Island, 1887; in the valley of Eagle River at Griffin Lake, B.C. 1889. (*Macoun.*)

443. MIMULUS.

(1658.) **M. moschatus,** Dougl., var. **sessilifolius,** Gray, Suppl. Synop. Fl. I., 446.

In water along China Creek, Alberni Canal, Vancouver Island, Aug. 1887. (*Macoun.*)

444. GRATIOLA.

(1659.) **G. obracteata,** Benth.; Macoun, Cat. II., 358.

Abundant in a field near the Railway Station at Nanaimo, and occasionally in wet places at Wellington Mines, Vancouver Island; in wet spots by the saw-mill at Kamloops, B.C. 1889. (*Macoun.*)

446. LIMOSELLA.

(1663.) **L. aquatica,** Linn., var. **tenuifolia,** Hoffm.; Macoun, Cat. II., 359.

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Quite common in a salt marsh at Brackley Point, Prince Edward Island. 1888. (*Macoun.*) Sable Island, 1870. (*Mrs. Almond.*)

445. ILYSANTHES.

(1667.) **I. riparia,** Raf.; Gray, Man., ed. VI., 385.

I. gratioloides, Benth.; Macoun, Cat. II., 359.

Leamy's Lake, near Hull, Que. 1889. (*Macoun.*)

451. CASTILLEIA.

(3167.) **C. breviflora,** Gray, Synop. Fl. I., 299.

In clumps, on dry hills, north of Kamloops, B.C., 1889. (*Macoun.*) On dry ground, Lower Arrow Lake, B.C.. 1889. (*Dawson.*) The specimens gathered at Osoyoos Lake, B.C., and referred to *Orthocarpus tenuifolius,* Part II., 366, belong here.

452. ORTHOCARPUS.

(3168.) **O. castilleioides,** Benth.; Gray, Synop. Fl. I., 300.

Quite common in wet meadows near the seashore, three miles below Alberni, on the Alberni Canal, Vancouver Island. 1887. (*Macoun.*)

460. BOSCHNIAKIA.

(1727.) **B. Hookeri,** Walp.; Macoun, Cat. II., 374 & III., 578.

Abundant on the roots of *Gaultheria Shallon,* near the base of Mount Benson, Nanaimo; also in woods along the Little Qualicum River, Vancouver Island, 1887. The greater number of the specimens were bright purple, but a few were quite pale. (*Macoun.*)

462. UTRICULARIA.

(1732.) **U. minor,** Linn.; Macoun, Cat. II., 375.

In a marsh at Mount Stewart, Prince Edward Island. 1888. (*Macoun.*)

(1733.) **U. gibba,** Linn.; Macoun, Cat. II., 375.

In a muddy bay off a large pond at Westminster, near London, Ont. (*Dearness.*)

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463. PINGUICULA.

(1737.) **P. villosa,** Linn.; Macoun, Cat. II., 376.
Frances River, Lat. 61°, N.W.T. 1887. (*Dawson.*)

468. VERBENA.

(1748.) **V. bracteosa,** Michx.; Macoun, Cat. II., 379 & III., 574.
On the shore of the river east of Point Edward, Ont., 1889. (*Dearness.*) Quite common at Spence's Bridge and Kamloops, B.C. 1889. (*Macoun.*)

470. TEUCRIUM.

(2203.) **T. occidentale,** Gray; Macoun, Cat., III., 574.
Low ground, London, Ont. 1880. (*Burgess.*) Amongst gravel along the Thompson River at Spence's Bridge, B.C. 1889. (*Macoun.*)

(3169.) T. Botrys, Linn.; Hook., Stud. Fl. 331.
Introduced. Roadside near London, Ont. 1888. (*Dearness.*)

(1750.) **T. Canadense,** Linn.; Macoun, Cat. II., 380.
Sandy woodlands at Point Pelee, Essex Co., Ont. 1886. (*Burgess.*) The localities mentioned under this No. in Part II., 380, belong partly to *T. Canadense* and partly to *T. occidentale.* In the absence of specimens, we cannot tell which is meant.

788. ELSHOLTZIA, Willd.

(3170.) E. cristata, Willd.
This is a curious exotic labiate, a native of Europe, and belonging near our genus *Collinsonia.* Found growing in a clearing near a mill at Notre Dame du Lac, on the shore of Lake Temiscouata, Q. 1887. There was no doubt but that it was introduced. (*John L. Northrop.*)

476. PYCNANTHEMUM.

(2205.) **P. muticum,** Pers., var. **pilosum,** Gray; Macoun, Cat., III., 574.
Very common in old fields, woodlands and along roadsides near Leamington, Essex Co., Ont. 1886. (*Burgess.*)

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475. HYSSOPUS.

(1762.) H. OFFICINALIS, Linn.; Macoun, Cat., II., 382.

A white variety is quite common on the roadsides near the St. Lawrence and Ottawa railway station in Ottawa. (*Fletcher Fl. Ott.*) The purple variety by roadsides in London, Ont. (*Dearness.*)

482. MELISSA.

(1771.) M. OFFICINALIS, Linn.; Macoun, Cat., II., 384.

Growing in clumps by roadsides in Clinton, Huron Co., Ont. (*Dearness*)

489. SCUTELLARIA.

(1788.) **S. angustifolia,** Pursh; Macoun, Cat., II., 388.

Moist ground near Victoria, Vancouver Island. 1885. (*Fletcher.*)

789. BALLOTA, Linn. (FETID HOREHOUND.)

(3171.) B. NIGRA, Linn. Black Horehound.

Introduced. Growing on roadsides with *Nepeta Cataria* at London, Ont. (*Dearness.*)

494. LAMIUM.

(3172.) L. MACULATUM, Linn.; Gray, Man., ed. VI., 421.

Escaped from gardens at London, Ont. (*Dearness.*) Both the white and the purple flowered varieties were found growing wild in the streets of Stratford, Ont. 1886. (*Burgess.*)

(1795). L. AMPLEXICAULE, Linn.; Macoun, Cat. II., 390.

Common in gardens in Toronto and London, Ont. (*Dearness.*)

(1796.) L. PURPUREUM, Linn.; Macoun, Cat. II., 390.

Escaped from gardens, London and Wallaceburg, Ont. (*Dearness.*)

497. PLANTAGO.

(1807.) **P. macrocarpa,** Cham. & Schl.; Macoun, Cat. II., 392.

On the portage between Alberni and Qualicum, Vancouver Island, 1887. (*Macoun.*)

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504. ACNIDA.

(1829.) **A. tuberculata,** Moq., var. **subnuda,** Watson; Macoun, Cat. III., 397.

It is probable that part of the localities referred to the species in Part III. belong to this variety, which is very common on the north side of the bridge over Brigham's Creek, leading to Hull Cemetery, near Ottawa. (*Macoun.*)

790. KOCHIA, Roth.

(3173.) K. SCOPARIA, Schrad.; Gray, Man., ed. VI., 431.

In waste lots on Sparks street, west of Bank street, Ottawa, 1882. (*Fletcher, Fl., Ott.*)

506. CHENOPODIUM.

(3174.) **C. Fremonti,** Watson, Bot. King's Exp., 287.

Among sand hills at the source of the Qu'Appelle River, Assiniboia, 1879; also on the Indian Reservation, at Kamloops, B.C., 1889. (*Macoun.*) Near Regina, Assiniboia. (*Fletcher.*)

(1838.) C. BONUS-HENRICUS, Linn.; Macoun, Cat. III., 400.

By roadsides at Brackley Point, Prince Edward Island, 1888. (*Macoun.*) Streets of Clinton, Huron Co., Ont. 1889. (*Dearness.*)

(1840.) **C. rubrum,** Linn., var. **humile,** Moquin; Macoun, Cat. III., 400.

On dried up brackish mud, frequent around Kamloops, B.C. 1889. (*Macoun.*)

(3175.) C. MURALE, Linn.; Gray, Man,, ed. VI., 432.

Introduced in ballast at Nanaimo, Vancouver Island. 1887. (*Macoun.*)

507. ATRIPLEX

(1841.) **A. patulum,** Linn.; Macoun, Cat. III., 401.

On ballast heaps at Nanaimo, and on sea beaches at Qualicum, Vancouver Island, 1887; sands, Burrard Inlet, B.C. 1889. (*Macoun.*)

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Var. **hastatum,** Gray; Macoun, Cat. III., 401.

Brackish mud at Kamloops, B.C., 1889; common along the Vancouver Island coast at Victoria, Nanaimo, Qualicum and Alberni. 1887. (*Macoun.*)

Var. **littorale,** Gray; Macoun, Cat. III., 401.

On sand at Brackley Point, Prince Edward Island, 1888; Burrard Inlet, at Vancouver City, B.C., 1889; sea beach at Qualicum, Vancouver Island, 1887. (*Macoun.*)

509. CORISPERMUM.

(1851.) **C. hyssopifolium,** Linn.; Macoun, Cat. III., 403.

Quite common at the north end of Spence's Bridge, B.C. 1889. (*Macoun.*)

791. AXYRIS, Linn.

(3176.) A. AMARANTHOIDES, Linn.

Roadside, ten miles west of Winnipeg, Man., 1886. (*Fletcher.*) Introduced.

518. POLYCONUM.

(1871.) **P. minimum,** Watson; Macoun, Cat., III., 408.

Quite common on gravel and sand at the outlet of Griffin Lake, B.C., and in the bed of the mountain torrent flowing into the lake at the same place. 1889. (*Macoun.*)

(1875.) **P. coarctatum,** Dougl.; Macoun, Cat., III., 408.

Not uncommon at Goldstream, Cowichan, Nanaimo and Qualicum, Vancouver Island; abundant in the Fraser valley at Yale, Lytton and on the Thompson at Spence's Bridge and Kamloops, B.C., in dry gravel and sand. 1889. (*Macoun.*)

(3177.) **P. Douglasii,** Greene.

On slopes of dry hills at Sicamous, B.C., July 3rd, 1889. (*Macoun.*)

(3178.) **P. intermedium,** Nutt.

In crevices of rocks on the summit of Mount Mark, Vancouver Island, altitude 3300 feet. 1887. (*Macoun.*)

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(1878.) **P. lapathifolium,** Linn.; Gray, Man., ed. VI., 440.

P. nodosum, Pers. & *P. incarnatum,* Macoun, Cat. III., 409, in part.

Spikes oblong to linear (½–2 in. long), dense, erect, or nearly so. Our herbarium specimens are from Brackley Point, Prince Edward Island; Norton, N.B.; Lake Nepigon, Ont.; Qu'Appelle, and Devil's Lake, Assiniboia; Kicking Horse Lake, Rocky Mountains; Indian Reservation, Kamloops, B.C.; and Cowichan River, Vancouver Island. (*Macoun.*)

Var. **incarnatum,** Watson, Gray, Man., ed. VI., 440.

P. incarnatum, Macoun, Cat., III., 409.

Spikes more slender and elongated (2–4 in. long), nodding. Our herbarium specimens are from Hull near Ottawa; Belleville, Hastings Co., Ont.; Kew Gardens, Toronto; Saskatchewan River; and Port Moody, B.C. (*Macoun.*)

Var. **incanum,** Koch.; Macoun, Cat., III., 410.

Leaves small, obtusish, more or less hoary beneath, with floccose tomentum; spikes short. Our specimens are from Seymour, Northumberland Co., Ont.; Gull Island, Lake Nepigon; Muskeg Island, Lake Winnipeg; Medicine Hat, Assiniboia. (*Macoun.*)

(1880.) **P. Muhlenbergii,** Watson; Gray, Man., ed. VI., 441.

P. Muhlenbergii, Macoun, Cat., III., 410, in part.

Decumbent or sub-erect, scabrous with short appressed hairs. Wet places, London, Ont. (*Burgess.*) On the Indian Reservation, Kamloops, B.C. 1889. (*Macoun.*) The latter specimens are without flowers and much more hairy than those from London.

(3179.) **P. emersum,** Muhl.?

Differs from *P. Muhlenbergii,* in having the leaves much rougher with appressed hairs; lower sheaths and petioles quite smooth and the upper part of the stem and flower spike covered with glandular hairs. Under side of petiole and midrib of leaf quite hairy. Our specimens are from Short Creek and Moose Jaw and Thunder creeks; also Tail Creek and Belly River. This is the common *Polygonum* along all the streams throughout the prairie region.

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519. FAGOPYRUM.

(1900.) F. TARTARICUM, Gærtn. (India-Wheat.)

Polygonum Tartaricum, Linn.; Macoun, Cat., III., 414.

An occasional escape from cultivation on waste heaps around cities.

521. RUMEX.

(1905.) R. PATIENTIA, Linn.; Macoun, Cat., III., 415.

Not uncommon along Carling's Creek, London, Ont. 1889. (*Dearness.*)

(1906.) **R. Brittanica,** Linn.; Gray, Man., ed. VI., 438.

R. orbiculatus, Gray; Macoun, Cat., III., 415.

Distinguished from *R. occidentalis*, by the valves being grain-bearing, whereas in that species they are naked.

532. EUPHORBIA.

(1943.) **E. Preslii,** Guss.; Gray, Man., ed. VI., 453.

E. hypericifolia, Macoun, Cat., III., 427.

We have no Canadian specimens of this species in our herbarium.

(3180.) E. ESULA, Linn.; Gray, Man., ed. VI., 456.

Introduced along the banks of Bayfield River, Huron Co., Ont. 1889. (*Dearness.*)

792. MACLURA, Nutt. (OSAGE ORANGE.)

(3181.) M. AURANTIACA, Nutt.; Gray, Man., ed. VI., 464.

Cultivated for hedges in south-western Ontario. Becoming wild in Essex County. (*Macoun.*)

540. URTICA.

(1956.) **U. Lyallii,** Watson; Macoun, Cat., III., 430.

Abundant in the valley of the Fraser from Agassiz to the coast; also at Nanaimo, Vancouver Island. (*Macoun.*)

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(1957.) **U. holosericea,** Nutt.; Macoun, Cat., III., 431.

The specimens referred here in Part III., 431, belong to *U. Lyallii.* Guichon Creek, Nicola Valley, B.C. (*Dawson.*) In wet places at Vernon at the head of Lake Okanagan, B.C. 1889. (*Macoun.*)

548. MYRICA.

(1970.) **M. Gale,** Linn.; Macoun, Cat., III., 434.

This species is common along lake margins in northern British Columbia; along Burnaby Lake, near New Westminster, and very common on Vancouver Island. (*Macoun.*)

550. ALNUS.

(1983.) **A. rubra,** Bongard; Macoun, Cat., III., 437.

Frances Lake, Lat. 61°, N.W.T. 1887. (*Dawson.*) Along the Thompson River at Spence's Bridge, B.C.; shore of Horne Lake, Vancouver Island. (*Macoun.*)

553. CORYLUS.

(1989.) **C. rostrata,** Ait., var. **Californica,** A.DC., Bot. Calif., II., 101.

Very common at Sicamous and Salmon Arm, Shuswap Lake; and Agassiz, B.C.; common on Vancouver Island at Goldstream. 1887. (*Macoun.*)

554. QUERCUS.

(1992.) **Q. Carryana,** Douglas; Macoun, Cat. III., 440.

Since the publication of Part III., the question has been raised whether R. Brown's *Q. Jacobi* is a good species or not. In August, 1887, I collected fine specimens of the oak on Sir James Douglas's lawn in Victoria, Vancouver Island, upon which Mr. Brown founded his species. Part of these specimens were submitted to Professor Sargent, and by him referred to *Q. Garryana.* I had collected specimens of the oak on other parts of the island, and could see no difference between them, so I fully agreed with Prof. Sargent that Mr. Brown's species could not stand.

In March last (1890), Rev. E. L. Greene, Berkeley, Cal., asked me to send him specimens of the Vancouver Island Oak. I did so; and he

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writes that all the specimens sent are *Quercus Jacobi*, R. Brown, and quite distinct from the Oregon *Q. Garryana*. It is therefore probable that the Vancouver Island Oak will become *Q. Jacobi*, instead of *Q. Garryana*.

(1993.) **Q. stellata,** Wang.; Gray, Man., ed. VI., 475.

Q. obtusiloba, Michx.; Macoun, Cat., III., 440.

We are still doubtful of the occurrence of this tree within our limits.

(1999.) **Q. coccinea,** Wang., var. **ambigua,** Gray, Man., ed. VI., 478.

Q. ambigua, Michx.; Pursh Fl. II., 630.
Q. rubra, Macoun, Cat., III., 442, in part.

In the new edition of Gray's Manual this variety is said to extend along the north-eastern borders of Lake Champlain and northward. This being the case, the Nova Scotia, New Brunswick, and most of the Quebec *Q. rubra* becomes this variety. Collectors in these provinces should collect a good series of fruiting specimens to determine this.

555. CASTANEA.

(2002.) **C. sativa,** Mill., var. **Americana,** Gray, Man., ed. VI., 479.

References under *C. vulgaris*, var. *Americana*, Macoun, Cat., III., 443, belong here.

557. SALIX.

(2007.) **S. Brownii,** Bebb.; Bot. Gaz., XIV., 444.

S. arctica, R. Brown, Bot. Ross. Voy., ed. II., 194; Hook., Fl. II., 152; Macoun, Cat. III., 444, in part.

"Omit synonym *S. cordifolia*, Hook. The localities given in Part III. are all correct, excepting 'Kotzebue Sound and Ounalashka (*Rothr., Alaska.*),' which almost certainly belong to *S. arctica*, Pallas (not R. Br.)." (*Bebb.*) South Twin Island, James Bay, 1887; shore of Hudson Bay, Lat. 55°–56°, 1886. (*J. M. Macoun.*) Mountains between Peel River and La Pierre's House, Arctic Circle, 1888. (*McConnell.*)

(2008.) **S. argyocarpa,** Anders.; Macoun, Cat. III., 445.

"Richardson's locality, 'Fort Franklin, on the Mackenzie,' were better omitted. There is no trace of this species among his collections that I have seen, and no evidence, at least in American herberia, that

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it grows anywhere in the North-West. 'Nepigon River, Lake Superior,' I would omit also; the specimens upon which it was given being of very doubtful determination." (*Bebb.*)

(2009.) **S. Barrattiana,** Hook.; Maçoun, Cat. III., 445.

"Omit 'Old Man River and South Kootanie Pass,' and add: 'in all thickets at high elevations, Kicking Horse Lake. (*Macoun*)'; a rediscovery after the lapse of fifty years of a most remarkable species." (*Bebb., Bot. Gaz., XIV.*, 51.)

(2011.) For **S. Barcleyi,** Anders., Macoun, Cat. III., 445, read **S. Barclayi,** Anders.

(2019 & 2038.) **S. phyllicoides,** Anders., Sal. Bor.-Amer., 18; Bebb. Bot. Gaz., XIII., 186; Macoun, Cat. III., 453.

S. fulcrata, var. *sub-glauca,* Anders.; Macoun, Cat. III., 448.

Arctic North America. (*Seeman, Richardson.*) Point Barrow. (*Murdoch, Oldmixon.*) Kuskokosin Valley, Alaska. (*Weinmann.*) Shumagin Islands. (*Harrington.*) Nushagak. (*McKay.*)

The localities are all furnished by Mr. Bebb.

(2020.) **S. flavescens,** Nutt., var. **tenuijulis,** Anders.

Very common in many places on Vancouver Island in wet places by lakes and rivers and marshes. Collected at Victoria, Cedar Hill, Gordon Head, Goldstream, Nanaimo, Cameron Lake, Alberni, and Salt Spring Island. 1887. (*Macoun.*)

Var. **Scouleriana,** Bebb; Macoun, Cat. III., 448.

Stikine River, B.C., above the canyon, 1887. (*Dawson.*) Lost Lake, Cedar Hill and Cameron Lake, Vancouver Island, 1887; also at Lytton, B.C., 1889. (*Macoun.*)

(2022.) **S. herbacea,** Linn.; Macoun, Cat. III., 449.

"This species is not known to occur on the west side of the continent, and I would not hesitate to strike out 'Northwest Coast (*Nelson*).'" (*Bebb.*) Our Rocky Mountain specimens are all *S. arctica,* var. *petræa,* and are therefore struck out. (*Macoun.*)

(2023.) **S. Hookeriana,** Barratt; Macoun, Cat. III., 449.

"Strike out the Saskatchewan habitat. We have now the explicit

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statement in Dr. Barratt's own handwriting that the type specimens were collected on the Northwest Coast by Dr. Scouler!" (*Bebb.*) Very abundant on Vancouver Island, from Victoria to Nanaimo, 1887; common around Burrard Inlet, and in the Fraser Valley, as far as Agassiz, B.C., 1887. (*Macoun.*) In the Fraser Valley specimens, Mr. Bebb found the capsules tomentose becoming smooth at the base.

(2024.) **S. humilis,** Marshall; Macoun, Cat., III., 449.

"Omit the Rocky Mountains locality. It it clear outside the known range of the species given on leaves only and doubtless a mistake." (*Bebb.*)

(2025.) **S. arbusculoides,** Anders., Monog. Sal., 147.

S. humillima, Anders.; Macoun, Cat., III., 449.
S. acutifolia, Hook. Fl. II., 150.

Prince Albert Sound. (*Mieschring.*) Rae River. (*Dr. Rae.*) Saskatchewan to Fort Franklin on the Mackenzie River. (*Hook. Fl.*) Marshes near the Rocky Mountains. (*Drummond.*)

(2026.) **S. lasiandra,** Benth., var. **typica,** Bebb.; Macoun, Cat., III., 449.

Abundant in thickets at Cedar Hill and Langford Lake, near Goldstream, Vancouver Island. 1887. (*Macoun.*)

Var. **lancifolia,** Bebb.; Macoun, Cat., III., 450.

Quite common in the neighbourhood of Victoria, Vancouver Island. Many of the trees are of large size; abundant at Agassiz and New Westminster, B.C. 1889. (*Macoun.*) Shore of Burrard Inlet at Vancouver City. (*Prof. Fowler.*)

Var. **Fendleriana,** Bebb.

Shore of Shuswap Lake, B.C., near Scotch Creek, June, 1889. (*Macoun.*)

(2031.) **S. myrtillifolia,** Anders., Sal. Bor.-Amer., 28.

S. Novæ-Angliæ, Anders., Sal. Monog., 160, & DC. Prod., 16[1], 253, mainly.
S. myrsinites, Hook. Fl. II., 151, mainly.

This may be considered to include all the forms included in No. 2031, Part III., 452. Throughout the region of the Canadian Lakes

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from north of the Lake of the Woods (*R. Bell*) to Great Bear Lake. (*Richardson.*) "Common on the Portage of the Grand Rapid of the Saskatchewan, near Lake Winnipeg." (*Douglas.*) Pic River, Lake Superior; and in swampy spots from Edmonton to the Athabasca River, at Fort Assiniboine. (*Macoun.*) Clearwater River, Lat. 57°, N.W.T., 1888. (*J. M. Macoun.*) Along streams in the foot-hills of the Rocky Mountains. (*Drummond.*)

(2034.) **S. arctica,** Pallas, Fl. Ross 2², 86; Bebb, Bot. Gaz., XIV., 115.

S. Pallasii, Anders., DC. Prod. 16², 285.
S. crassijulis, Trev., ex Traut. Sal. frigid, 308.
S diplodictya, Traut., Sal. frigid, 307.

This species includes No. 2034 and its varieties, Part III., 452. Alaska and adjacent islands on the tops of high hills; Nulaska. (*Kellogg, Harrington, Escholtz.*) Shumagin Islands. (*Harrington.*) Nushagak. (*McKay.*) Semidi Islands. (*Dall.*) Doubtless this species will be found on Queen Charlotte Islands.

(2036.) **S. phlebophylla,** Anders.; Macoun, Cat. III., 452.

"A species of high Arctic distribution in western rather than in eastern British America. The station, 'Eastern summit of North Kootanie Pass, Rocky Mountains,' should be omitted; even Rothrock's localities, south of Behring's Strait, are very doubtful. Much confusion has arisen from Anderson's having at first distributed one of Dr. Lyall's Cascade Mountain Willows as *S. phlebophylla*, the same plant that afterwards served as the type of his *S. tenera*, N. Sp., in reality only a form (by no means rare) of *S. Brownii*." (*Bebb.*)

(2043.) **S. Richardsoni,** Hooker.; Macoun, Cat. III., 454.

Repulse Bay. (*Parry.*) Crevices in rocks, Nachvak, coast of Labrador. (*R. Bell.*)

Var. **Macouniana,** Bebb, Bot. Gaz., XIV., 50, Pl. 9.

Leaves orbicular, the earliest obovate, quite entire, less than one inch long and broad, covered when young with floccose hairs, especially on the upper surface, soon smooth, dark green and somewhat shining above, paler and reticulate-veined beneath; aments small for the group, whitish-silky with just a shade of fulvous in the male, scales obtuse, stigmas entire, otherwise as in the type. (*Bebb.*) A small compact bush, 2 to 4 feet high, with just the habit of a garden currant, growing

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in peaty soil by a small pond in company with *S. Brownii*.. South Twin Island, James Bay, July 17th, 1887. (*J. M. Macoun.*)

(2046.) **S. speciosa,** Hook. & Arn.; Macoun, Cat. III., 454.

Upper Liard River, N.W.T., Lat. 60°. (*Dawson.*) Fifty miles below Good Hope, Mackenzie River, 1888. (*McConnell.*) "Forks of Dean River, 8 to 12 feet high." (*Dr. Richardson.*)

(3182.) **S. macrocarpa,** Nutt.

Very common in wet thickets in the district around Victoria, Vancouver Island, 1887. (*Macoun.*)

(3183.) **S. monticola,** Bebb; Coutler, Man. Rock. Mount. Fl. 336.

"Leaves oblong-lanceolate, the earliest obovate, acute 3 to 6 inches long, 1 to 1¾ inches wide, glabrous, rigid and glaucous beneath, or thin and pale beneath, unevenly crenate or serrulate; stipules large, semi-cordate, acute; buds large, ovate and beaked at the tip; aments thick, densely flowered, sessile; males closely so; females with a few broad bracts at base, when in flower about an inch long, lengthening in fruit to 1½ to 2 inches; scales oval, obtuse, clothed with long yellowish-white silky hairs; capsules ovate-conical, glabrous, sessile or nearly so; style elongated; stigmas erect, bifid or entire. A densely cespitose shrub, 8 to 12 feet high, stem 1 to 2 inches in diameter." Old Man River, Rocky Mountains, Aug. 14, 1883. (*Dawson.*) These specimens were referred to *S. Barrattiana* in Part III., 445. A few fragments of what has been considered this species were collected on the Rocky Mountains at Kicking Horse Lake, July, 1885. (*Macoun.*)

(3184.) **S. commutata,** Bebb., Bot. Gaz., XIII., 110.

"A diffuse alpine shrub of variable stature, commonly 3 to 4 feet in height, in sheltered localities 8 to 10 feet, often much dwarfed by altitude and exposure; leaves broadly oblanceolate or oblong, abruptly pointed, cuspidate, tapering toward the roundish base, at first covered more or less with a dense silky tomentum, downy even when fully grown; older and lower leaves becoming smooth, green both sides (not glaucous beneath), margin entire or (under a lens) minutely glandular-serrulate; leaves of sterile shoots ample, 3 to 4 inches long, varying to cordate-ovate, thinnish in texture; stipules large, ovate, glandular-serrate; aments on stout leafy peduncles, with 4 to 7 ovate or oblanceolate leaves, erect, densely flowered, an inch long; fertile in fruit 2 inches, compact cylindrical; scale thin, pale or brownish, obtuse,

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woolly; capsule ovate-conical, glabrous, greenish or rufescent; pedicel pubescent, 2 to 3 times the length of the nectary; style medium, stigmas small, erect, entire." Boggy places on the summit of Mount Queest, Gold Range, B.C. Alt. 6500, July 25, 1889. (*J. M. Macoun.*)

(3185.) **S. conjuncta,** Bebb, Bot. Gaz., XIII., 111.

"Leaves of the flowering branches elliptic or obovate, sub-acute, 1 to 1½ in. long; leaves of the sterile branches ample, 2 to 4 in. long, 1 to 2 in. wide, ovate-lanceolate, cuspidate-acuminate, attenuate or rounded at base; stipules large, ovate, acute; all glabrous or at first thinly overspread on the upper surface with evanescent floccose hairs, at length rigid, scarcely paler or rarely sub-glaucous beneath, young drying black, margins finely and evenly crenate-serrulate; aments borne on stout leafy peduncles, large, thick, 1 to 2 in. long; fertile, becoming rather loose and flexuous in fruit (lengthening sometimes to 3 in.); scale acutish, dark, villose with crisp hairs, sometimes densely or again thinly hairy or quite naked at the tip; capsule glabrous, rostrate from an ovate base; pedicel three times the length of the nectary; style medium or elongated, about equalling the pedicel, stigmas short, entire or bifid." Summit of South Kootanie Pass, Rocky Mountains; and Cassiar Trail, 20 miles north-west of Dease Lake, N.W.T. (*Dawson.*) Mountains around Kicking Horse Lake and the summit of the Selkirks; also on the summit of the Gold Range north of Griffin Lake, B.C. Alt. 6500 feet. (*Macoun.*) Summit of Mount Queest, Gold Range, B.C. (*J. M. Macoun.*) Kodiak. (*Kellogg.*)

The articles published by Mr. M. S. Bebb in the Botanical Gazette, on the North American Willows, should be consulted in connection with this genus.

563. JUNIPERUS.

(2068.) **J. communis,** Linn., var. **alpina,** Linn.; Macoun, Cat. III., 462.

On mountains at Spence's Bridge, B.C.; summits of mounts Benson, Mark and Arrowsmith, Vancouver Island. (*Macoun.*)

564. TAXUS.

(2070.) **T. brevifolia,** Nutt.; Macoun, Cat. III., 463.

Assuming the form of a small tree, between Sproat's Landing and Nelson, and on Kootanie Lake, B.C. (*Dawson.*)

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565. PINUS.

(2075.) **P. albicaulis,** Engelm.; Macoun, Cat. III., 465.

Generally abundant in southern interior of British Columbia, between heights of 5000–6000 feet; Toad Mountain and vicinity to 7000 feet. (*Dawson.*)

(2077.) **P. ponderosa,** Dougl., var. **scopulorum,** Engelm.; Macoun, Cat. III., 466.

From near the head of Lower Arrow Lake, southward, and all along Kootanie Lake, B.C. (*Dawson.*)

566. PICEA.

(2082.) **P. nigra,** Link.; Macoun, Cat. III., 468.

Since the publication of Part III., we have made extensive collections in Prince Edward Island, and having observed the so-called species, *P. nigra* and *P. rubra*, growing together, we are satisfied that they are distinct enough to be separated as a species and variety. In Gray, Man., ed. VI., 492, *P. rubra* is admitted as a variety, and we now write it as:—

Var. **rubra,** Engel.; Gardn. Chron. (N.S.), XI., 1879.

Differs from the species in having darker and larger leaves; larger, bright red-brown cones, which are more readily deciduous after maturity. (*Engelm.*) It is more than probable that in the far Northwest we have a species or variety that is also distinct from the typical eastern *P. nigra*. This form has large ovoid cones, which are deep purple, and without the brownish tint of those from the east.

567. TSUGA.

(2088.) **T. Pattoniana,** Engelm; Macoun, Cat. III., 472.

On the higher slopes of the mountains at the Glacier Hotel, Selkirk Summit; also on the summit of Mount Benson (alt. 3000 feet), Mount Mark (alt. 3300 feet), and Mount Arrowsmith (alt. 5500 feet), Vancouver Island. 1887. (*Macoun.*) In valleys of the Coast Range at head of Chilkoot Inlet (Lat. 59° 30′), and on the Chilkoot Pass to

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over 3000 feet altitude. (*Dawson.*) It is very probable that this species is found on all summits on Vancouver Island, over 2500 feet high.

769. ABIES.

(2093.) **A. amabilis,** Forbes; Macoun, Cat. III., 475.

Abundant, in company with *T. Pattoniana,* on the summits of mounts Mark, Benson and Arrowsmith, Vancouver Island, 1887; not observed on the mountains of the mainland in 1889. (*Macoun.*)

570. LARIX.

(2094.) **L. Americana,** Michx.; Macoun, Cat. III., 475.

Extends west of the Rocky Mountains in the Liard Valley to Lat. 61° 55″, Long. 130°. (*Dawson.*)

(2095.) **L. occidentalis,** Nutt.; Macoun, Cat. III., 475.

On the mountain side, east of Sicamous, about 500 feet above the lake. 1889. (*Macoun.*) From about half-way down the Upper Arrow Lake, southward along the Columbia Valley, B.C.; on Kootanie Lake, to the north end, and farther. (*Dawson.*)

591. CORALLORHIZA.

(2217.) **C. odontorhiza,** Nutt.; Macoun, Cat. IV., 5.

Rather common in moist woods at Plover Mills, Middlesex Co., Ont. (*R. Elliott.*)

600. HABENARIA.

(2249.) **H. elegans,** Bolander; Macoun, Cat. IV., 17.

On the mountain side at Sicamous, B.C., 1889. (*Macoun.*)

(2258.) **H. psycodes,** Gray; Macoun, Cat. IV., 19.

A form with deeply laciniate lip, and the flowers more erect and in a narrower spike than usual (in this respect approaching *H. lacera*), was found in a wet meadow at Baddeck, Cape Breton Island, July 19th, 1883. These plants, which had purple flowers, are, I fancy, hybrids between *H. psycodes* and *H. lacera,* both of which were abundant in the

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same meadow. Prof. Eaton, to whom specimens were referred, was much struck with their peculiar appearance. (*Burgess.*)

601. CYPRIPEDIUM.

(2261.) **C. parviflorum,** Salisb.; Macoun, Cat. IV., 20.

North Thompson River, 25 miles north of Kamloops, B.C. Alt. 3000 feet. 1889. (*J. McEvoy.*)

(2265.) **C. montanum,** Dougl.; Macoun, Cat. IV., 22.

Abundant in grass at the station yard at Agassiz; and on the hill-sides at Sicamous, B.C., 1889. (*Macoun.*)

603. IRIS.

(2272.) **I. prismatica,** Pursh; Gray, Man., ed. VI., 514.

I. Virginica, Macoun, Cat. IV., 24.

Collected at New Harbor, Newfoundland. (*Rev. A. C. Waghorne.*)

604. SISYRINCHIUM.

(2276.) **S. angustifolium,** Mill.; Gray, Man., ed. VI., 515.

References under *S. mucronatum,* Michx., Part IV., 25, belong here.

793. MUSCARI, Tour. (GRAPE-HYACINTH.)

(3186.) M. BOTRYOIDES, Mill.; Gray, Man., ed. VI., 523.

Grand Trunk Railway track, between Hamilton and Dundas, May, 1888. (*Mr. Galbraith.*) Burlington, near Hamilton, Ont. (*Burgess.*) Evidently escaped from gardens.

611. SMILICINA.

(2291.) **S. racemosa,** Desf.; Macoun, Cat. IV, 31.

The specimens gathered on Vancouver Island in 1887, and referred doubtfully to *S. amplexicaulis,* belong here. Port Haney and other places in the Fraser Valley, B.C., 1889, *S. amplexicaulis* not seen. (*Macoun.*)

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(2290.) **S. sessilifolia,** Nutt.; Macoun, Cat. IV., 31.

Specimens collected in 1889, at Agassiz and Spence's Bridge, B.C., have the flexuous stem and distichous leaves of this species. They are quite distinct from *S. stellata*, of the Rocky Mountains and eastward. (*Macoun.*)

619. ERYTHRONIUM.

(2323.) **E. grandiflorum,** var. (?) **albiflorum,** Hook.; Macoun, Cat. IV., 41.

Common in rich woods along the Hastings and New Westminster Road at Burnaby Lake, B.C., 1889. (*J. M. Macoun.*)

Var. **giganteum,** Hook.; Macoun, Cat. IV., 42.

Very abundant at Sicamous, and in fine flower April 3rd, 1889; common on mountain slopes around Shuswap Lake, and on mountains in the Gold Range at Griffin Lake, B.C., 1889. Flowers very large and bright yellow. Quite distinct from the Coast and Vancouver Island form. (*Macoun.*)

623. XEROPHYLLUM.

(2328.) **X. tenax,** Nutt.; Macoun, Cat. IV., 43.

On Toad Mountain, 6000 feet, West Kootanie, B.C., 1889. (*Dawson.*)

794. OAKESIA, Watson.

(2335.) **O. sessilifolia,** Watson; Gray, Man., ed. VI., 528.

Uvularia sessilifolia, Linn.; Macoun, Cat. IV., 45.

Dr. Watson in the new manual makes the above new genus to include this and another species.

637. JUNCUS.

(2358.) **J. effusus,** Linn., var. **brunneus,** Engelm.; Macoun, Cat. IV., 55.

Abundant, growing in tufts at Hastings and Port Moody, B.C., 1889. (*Macoun.*)

(2359.) **J. filiformis,** Linn.; Macoun, Cat. IV., 55.

Growing in profusion at Kamloops, B.C., 1889. (*Macoun.*)

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(2363.) **J. Drummondii,** E. Meyer; Macoun, Cat. IV., 57.

Plateau east of Adam's Lake, B.C. Alt. 6000 feet. 1888. (*Dawson.*) Abundant on Mount Queest and other summits of the Gold Range, B.C., 1889. (*J. M. Macoun.*)

(2373.) **J. Gerardi,** Lois.; Macoun, Cat. IV., 60.

In salt marshes along both sides of Burrard Inlet, B.C., 1889. (*Macoun.*)

(2375.) **J. falcatus,** E. Meyer, var. **paniculatus,** Engelm, Trans. Acad. St. Louis.

Abundant in grassy places, shore of Shawnagin Lake, Vancouver Island, 1887. (*Macoun.*)

(2376.) **J. longistylis,** Torrey; Macoun, Cat. IV., 60.

In a marsh at Penticten, at the southern end of Lake Okanagan, B.C. 1889. (*Macoun.*)

(3187.) **J. oxymeris,** Engelm., Trans. Acad. St. Louis.

This is what was referred to *J. xiphioides*, var. *littoralis*, in Part IV., 65. Mr. F. V. Coville, of the Dept. of Agriculture, Washington, DC., informs me that my specimens distributed as above are really this species.

(3188.) **J. Bolanderi,** Engelm., Trans. Acad., St. Louis.

J. xiphioides, var. *macranthus*, Macoun, Cat., IV., 65, in part.

Some of the specimens distributed as var. *macranthus* are of this species while others are quite correct. Those collected at Lost Lake near Cedar Hill, Vancouver Island, have the knotted almost terete leaves that distinguish the species from every form of *J. xiphioides.*

638. LUZULA.

(2389.) **L. spadicea,** DC.; Macoun, Cat., IV., 65.

On the summit of Mount Queest, and on the mountains north of Griffin Lake in the Gold Range, B.C. Alt. 6000 to 7000 feet. 1889. (*Macoun.*) This is the first record we have of the type in Canada. It is quite distinct from var. *parviflora*, the flowers being twice as large.

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(2391.) **L. vernalis,** DC.; Gray, Man., ed. VI., 546.

L. pilosa, Willd.; Macoun, Cat., IV., 67.

Changed in Gray's new Manual. A very appropriate name.

640. SPARGANIUM.

(2401.) **S. simplex,** Huds.; Macoun, Cat., IV., 70.

In marshes in many parts of Prince Edward Island, 1888; abundant at Agassiz, in the Fraser valley, and at Craigellachie in the Gold Range, B.C. 1889. (*Macoun.*)

Var. **Nuttallii,** Engelm.

In marshes at Mount Stewart, Prince Edward Island. 1888. (*Macoun.*) Mr. Beeby doubtfully refers this specimen here.

Var. **acaule,** Beeby, MS.

"Stem three inches from crown of root to apex of male spike, female heads 2–3, closely agglomerated, partly hidden by the leaf bases. Leaves erect, rigid, a foot high. (Three times longer than the flower stem.)" (*Beeby.*) Quite common in ponds and wet spots by the roadside in many parts of Prince Edward Island, especially at Lake Verde, Brackley Point and Winter River. 1888. (*Macoun.*) I believe this to be a good variety as there was no local reason for the peculiar growth.

Var. **longissimum,** Fries.

Abundant in still water, Spallumsheen River at Enderby, B.C. (*J. M. Macoun.*) Common in Griffin Lake in the Gold Range, B.C. (*Macoun.*) I believe that much of our *S. affine* belongs here, especially those forms with floating stems and leaves.

(2402.) **S. affine,** Schnitzlein; Macoun, Cat., IV., 70.

In pools on the mountains at the head of Nicoamen River, B.C. Alt. 6000 feet. 1889. (*Dawson.*) In a pool on Mount Arrowsmith, Vancouver Island. Alt. 5000 feet. 1887. (*Macoun.*) This is an alpine form of the species. (*Beeby.*)

(2404.) **S. minimum,** Fries.; Macoun, Cat. IV., 70.

In bogs, Methy River, Lat. 56°, N.W.T. 1888. (*J. M. Macoun.*) Common in ponds at Craigellachie, Gold Range, B.C. 1889. (*Macoun.*)

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641. ARISÆMA.

(2406.) **A. Dracontium,** Schott.; Macoun, Cat. IV., 72.

On a flat in Delaware Township near London, Ont. 1889. (*Mr. H. D. Johnson.*) On an island in the Sydenham River, near Strathroy, Ont. (*Dearness.*)

642. PELTANDRA.

(2407.) **P. undulata,** Raf.; Gray, Man., ed. VI., 72.

P. Virginica, Macoun, Cat. IV., 72.

Very local in its distribution. Should be looked for in western Ontario.

647 LEMNA.

A species of this genus resembling *Spirodela polyrrhiza* in color, but having the general appearance of *L. minor,* and with more than one root was common in ponds at Agassiz, B.C., May 20th, 1889. For the present this form must remain without a name or number.

795. SPIRODELA, Schleiden.

(2414.) **S. polyrrhiza,** Schleid.; Gray, Man., ed. VI., 552.

Lemna polyrrhiza, Linn.; Macoun, Cat. IV., 75.

In still water at Sicamous, Agassiz, and Port Haney, B.C. 1889. (*Macoun.*)

648. WOLFFIA.

(2415.) **W. Columbiana,** Karsten; Macoun, Cat. IV., 76.

In a bay of Lake Ontario, west of Niagara Town, in company with *W. Brasiliensis,* Weddell. 1889. (*Dearness.*)

650. SAGITTARIA.

(2418.) **S. variabilis,** Engelm.; Macoun, Cat. IV., 77.

Abundant in the South Thompson River at Kamloops, B.C. 1888. (*Dawson.*) In marshy spots subject to tide action along the lower

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Fraser opposite Lulu Island; also on the Indian Reservation at Kamloops and eastward up the South Thompson, and the whole length of Shuswap Lake, and up the Spallumsheen River to, and beyond Enderby, B.C. 1889. (*Macoun.*)

656. POTAMOGETON.

(2430.) **P. Pennsylvanicus,** Cham.; Gray, Man., ed. VI., 559.

P. Claytonii, Tuckerman; Macoun, Cat. IV., 82.

In the Kaministiquia River near Fort William, Lake Superior. 1889. (*Dr. Britton.*) Rivière des Aulnais, Q. (*St. Cyr.*)

(2434.) **P. alpinus,** Balbis (1804); Bennett, Letter, March 3, 1890.

P. rufescens, Schrad. (1815); Macoun, Cat. IV., 83.

"The specimens from 'Ounalashka,' (Herb., Berlin) were named *P. microstachys,* Wolfgang in Rœm. & Schultze, Veg. Sys., Mant. 3, p. 360 (1827); but the specimens are only a var. (?) or form of *P. rufescens,* Schrad. This name, *P. rufescens,* will probably have to give way. There are *three,* certainly, if not more, prior names; but it is not settled yet which is the earliest. I have a Greenland specimen of *P. rufescens.*" (*Bennett,* 1888.) Anstey's Creek, Shuswap Lake; and Bonaparte River, B.C. (*J. M. Macoun.*) Griffin Lake, Gold Range, B.C., 1889. (*Macoun.*)

(2435.) **P. fluitans,** Roth.; Gray, Man., ed. VI., 560.

P. lonchites, Tuck.; Macoun, Cat. IV., 83.

Mr. Morong considers this *P. lonchites* or var. *Americanus* of that species; but Mr. Bennett, of Croydon, thinks it is *P. pumilus,* Wolfgang. This would date from 1827. Rœm. et Schultze, Sys. Veg. Mant. 3.

A plant provisionally referred here is spoken of by Mr. Bennett, as below:—

"Your plant (No. 21) is like a specimen from Silesia, in Prussia, named '*P. natans* var. *prolixus,* Koch, = *P. serotinus,* Shrad., but your plant has the leaves narrower, and larger, and the stipules shorter, and must be studied and described later. A further examination of your specimens shows them to be much like a plant in Wallich's herb. from India, named '*P. didymus,* Wall., Napalia, 1821;' but there is no fruit on his specimen. This, anyhow, seems to fall under *P. fluitans* as an aggregate species. After a good deal of comparing with all the *natans* group, I can come to no other result than

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that this (No. 21) is a form of *P. lonchites*, Tuckerman. The only actual difference is the shining lower leaves, but this and its peculiar yellow-brown colour may be produced by some local influence? But the stipules of your plant at once remove it from any form of *P. lucens* (*P. longifolius, Gaudichaudi*, &c.) Is the difference enough to call it a form?" (*Bennett*, Letter, March 3rd, 1890.)

(2437.) **P. heterophyllus,** Schreb.; Gray, Man. VI., 561.

P. gramineus and var. *heterophyllus*, Macoun, Cat. IV., 84.

Both Mr. Bennett and Mr. Morong combine these, and prefer Schreber's name, as it is specific and well understood.

(2439.) **P. Zizii,** Roth. (not Mertens & Koch.)

Mr. Bennett writes that Mertens & Koch published this as a variety, *not as a species*. Roth was the first to do this. It is not improbable that it has a prior name: *P. angustifolia*, Presl. Rather common in Griffin Lake, Gold Range, B.C. 1889. (*Macoun.*)

Var. **Methyensis,** Bennett, MS.

Methy Lake, near Methy Portage, Lat. 57°, 1888. (*J. M. Macoun.*)

(2441.) **P. perfoliatus,** Linn., var. **Richardsonii,** Bennett, MS.

P. perfoliatus, Linn., var. *lanceolatus*, Robbins; Macoun, Cat. IV., 85.

"Dr. Robbins published this name in Gray, Man., ed. V., 488; but it is pre-occupied by Blytt in Norges Flora, 1861, for a Norwegian var., which is not the same as Robbins' plant! [Le Grand, a French author, has since (1887) published a var. *lanceolatus*, a French form of *P. perfoliatus.*] I prefer the name var. *Richardsonii* for the American *P. lanceolatus*, after Dr. Richardson, who seems to have been the first to collect it. (*Glasgow Herb.*) British-American 'Franklin Expedition'." (*Bennett.*) Methy Lake and River, Lat. 57°, 1888; Anstey's Creek, Shuswap Lake, B.C. 1889. (*J M. Macoun.*) In a pond on the Reservation at Kamloops, B.C. 1889. (*Macoun.*)

(2443.) **P. obtusifolius,** Mertens & Koch; Macoun, Cat. IV., 86.

Methy River, Lat. 57°, 1888. (*J. M. Macoun.*)

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(2415.) **P. pusillus,** Linn., var. **elongatus,** Bennett, MS, 1890.

"A form of *P. pusillus*, that so far as I know has received no name. In my herbarium I have marked it '*P. pusillus*, var. *elongata*, *mihi*.' I have specimens from Hungary that are very near these from B.C. It has some of the faces of *P. rutilus*, Wolf.; but that has much sharper leaves, with long stipules and rigid stems. There is no fruit, but the sepals (perianth segments) are large and long-hafted. I find, on referring to my notes, that exactly similar specimens to yours are in the British Mus. Herb., named '*P. rutilus*, Wolf.' It certainly does bear a resemblance to a specimen I have named *P. cæspitosus*, Notte! (leg. Notte 7, = *P. rutilus*, Wolf.!) but the likeness is only superficial." (*Bennett*, Letter, March 3rd, 1890.) Spallumsheen River, at and above Enderby, B.C., July 10th, 1889. (*J. M. Macoun.*)

(2446.) **P. mucronatus,** Schrad.; Macoun, Cat. IV., 88.

"I name this now *P. Friesii*, Ruprecht in Bert. d. Russ. Reiches, 1845. There is *good* reason to think that Schrader's plant was the var. *acuminatus*, Schun. of *P. lucens*. This was (*Herb. Glasgow*) gathered by the Franklin Expedition." (*Bennett.*) Winter River, and Sea Cow Pond, Prince Edward Island, 1888. (*Macoun.*) Spallumsheen River, at Enderby, B.C. (*J. M. Macoun.*)

(2447.) For **P. rutilans,** Wolfgang; Macoun, Cat. IV., 88, read **P. rutilus,** Wolgang in Rœm. & Schultze, Veg. Sys. Mant. 3, p. 362 (1827.) "It is the *P. cæspitosus* of Nolte." (*Bennett.*)

(3189.) **P. vaginatus,** Turcz., Flora baiclensi-dahurica, 1856. (Siberia.)

"This plant, placed under *P. pectinatus*, in Ledebour's Flora Rossica, vol. 4, is stated by Dr. Kihlman (of Helsingfors) in Botanisha Notisea, 1887, page 85, to have been brought from "Saskatchewan, Canada, Bourgeau, Palliser's Exp., 1858." (*Bennett.*) Buffalo Lake, N.W.T., Lat. 56°, 1888. (*J. M. Macoun.*)

(3190.) **P. flabellata,** Babington.

Mr. Bennett sent a specimen of this to Mr. Babington, who names it as above. It belongs to the same group as *P. pectinatus*. North Pond, near East Point, Prince Edward Island, 1888. (*Macoun.*) "(No. 11) *P. pectinatus*, Linn., var. *pseudo-marinus*, Bennett, = *P. pectinatus*, Linn.,

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forma salina, Voch! (It really comes under *P. flabellata*, Bab., as a variety, but without fruit, it is impossible to say so.)" (*Bennett*, Letter, 1890.) In a saline pond north of Kamloops, B.C., June 13th, 1889. (*Macoun.*)

(2449.) **P. pectinatus,** Linn.; Macoun, Cat. IV., 88.

"Judging by the young fruit this (No. 12) must go to *P. pectinatus*, Linn., as an aggregate. It comes close to the var. *longissimus*, Mertens & Koch (1823), which was issued in the Flora Lugricæ, 1860, as the var. *longissimus*, Weissmann Fl. Petrop." (*Bennett* Letter, March 3rd, 1890.) Pond on the Indian Reservation at Kamloops, B.C., June 26th, 1829. (*Macoun.*)

657. RUPPIA.

(3291.) **R. lacustris.**

Stems rigid, firm and woody, forking and producing numerous leaves in bud-like clusters at the nodes and ends of the branches. Leaves sheathing, rigid and straight; stipules white, membraneous from one to two inches long. Fruiting peduncles *bright red* rising from the centre of the leaf clusters, coiling spirally after flowering. Fruit immature.

A very distinct species, having more the appearance of *Potamogeton pectinatus* than *Ruppia maritima*. Abundant in a saline pond north of the Ferry at Kamloops, B.C., June 13th, 1889. The pond is one of a series in the bare hills above the trail leading to Tranquille. (*Macoun.*)

665. HELEOCHARIS.

(2467.) **H. ovata,** R. Br.; Gray, Man., ed. VI., 574.

H. obtusa, Schultes; Macoun, Cat. IV., 95.

Not uncommon in British Columbia. Agassiz. 1889. (*Macoun.*)

(2468.) **H. palustris,** Linn., var. **Watsoni,** Clarke, Journ. Bot., XXV., 268. (1887.)

Stated by Mr. Clarke to occur in Newfoundland, Labrador, and subarctic America, and to be a very trifling depauperate form or variety with castaneus spike. (*Britton.*) Hudson Bay. (*Burke*, fide *Britton.*) In wet sand, Brackley Point, Prince Edward Island. 1888. (*Macoun.*)

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Var. **vigens,** Bailey in Herb. Gray.

"Culm stout, thick, very spongy, constricted at the summit, nearly as thick as the ovate spike." (*Britton.*) In muddy places by ponds, Victoria Road and Mount Stewart, Prince Edward Island. 1888. In a pond on the road to Cedar Hill about one mile from Victoria, Vancouver Island. 1887. (*Macoun.*)

(2469.) **H. acuminata** (Muhl.) Nees.; Britton, Journ. N. York, Micros. Soc., X., 109.

H. compressa, Sulliv.; Macoun, Cat. IV., 96.

Specimens referred to *H. tenuis* (in Part IV., 97) from Salt Lake, Anticosti; east coast of Lake Nepigon; Lake Superior at Thunder Bay; marsh, Porcupine Mountains, Man.; and Moose Jaw Creek, Assiniboia, belong here.

(2471.) **H. intermedia,** Schultes.; Macoun, Cat. IV., 96.

In mud along the shore of Leamy's Lake, near its outlet at Hull Cemetery, near Ottawa. 1889. (*Macoun.*)

672. CAREX.

(2505.) **C. capitata,** Linn.; Macoun, Cat. IV., 109.

Damp, grassy places, Methy River, Lat. 57°, N.W.T. 1888. (*J. M. Macoun.*)

(2507.) **C. dioica,** Linn.

Professor Bailey informs me that the specimens placed under this species in Part IV., 109, belong to *C. gynocrates.* This species is therefore cancelled, and references under it go to *C. gynocrates.*

(2524.) **C. Jamesii,** Schweinitz; Bailey, Mem. Torr. Bot. Club., I., 48.

References under *C. Steudelii*, Kunth, Part IV., 113, belong here.

(2528.) **C. Sartwellii,** Dew. Sill. Journ. XLIII., 90. (1842.)

References under *C. disticha*, Huds, Part IV., 114, belong here.

Prof. Bailey in Mem. Torr. Bot. Club, I., 8, says that "the American plant is abundantly distinct from the European *C. disticha*, Huds." Prof. Dewey and Dr. Boott thought otherwise, but we fully agree with Prof. Bailey in keeping them apart.

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Var. **occidentalis,** Bailey, MS. N. Var.

Head lighter coloured than in the species; spikes more pointed; scales thin, whitish, very sharp and as long as, or longer than the perigynium. Guichon Creek, Nicola Valley, B.C. 1888. (*Dawson.*) Borders of saline marshes around Kamloops, B.C. 1889. (*Macoun.*)

(2529.) **C. Douglasii,** Boott; Macoun, Cat. IV., 115.

Abundant and in fine fruit on the dry arid plain between the Ferry and the North Thompson, opposite Kamloops, B.C., June, 1889. (*Macoun.*)

(2530.) **C. marcida,** Boott; Macoun, Cat. IV., 115.

Quite common on the dry flats by the Thompson River at Spence's Bridge and Kamloops, B.C. 1889. (*Macoun,*)

Var. **alterna,** Bailey, MS. N. Var.

"Tall and very slender, the culm even flexuose; spikes small and scattered, the lower ones a half inch or more separated and the head often 2 inches long; perigynium lance-ovate, longer than in the species and more strongly nerved, especially on the outer side, and strongly stipitate." In dry gravelly soil along Shuswap Lake near Scotch Creek, B.C., June 18th, 1889. (*Macoun.*)

(2533.) **C. teretiuscula,** Good., var. **ampla,** Bailey, Mem. Torr. Bot. Club, I., 53.

"Very large and stout, growing three feet or more high in dense tufts; heads large (2 to 3 in. long), much branched, chaffy; perigynium twice larger than in the species, nerved on the back, shining at maturity, produced into a long beak." Quaking bog, on the border of Burnaby Lake, near Vancouver City, B.C., April 19th, 1880. (*J. M. Macoun.*)

(2543.) **C. Hookeriana,** Dewey; Bailey, Mem. Torr. Bot. Club, I., 14.

C. muricata, var. *gracilis,* Boott; Macoun, Cat. IV., 118.

"Very slender; head interrupted, castaneous, small, the spikes sometimes alternately arranged; bracts of the two or three lower spikes produced into long awns, which surpass the spikes; perigynium small, green, usually lightly nerved, gradually produced into a beak which is cut into sharp awl-like teeth." See Part IV. for distribution.

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(2545.) **C. Hoodii,** Boott; Bailey, Mem. Torr. Bot. Club, I., 14; Macoun, Cat. IV., 119.

C. muricata, Linn., var. *confixa,* Bailey; Macoun, Cat. IV., 119.

In thickets at Agassiz, B.C., May 14th, 1889. (*Macoun.*)

(2549.) **C. festiva,** Dew., var. **pachystachya,** Bailey, Mem. Torr. Bot. Club, I., 51.

C. festiva, Dew., var. *gracilis,* Macoun, Cat. IV., 120, in part.

"Culm more or less prolonged (1 to 3 ft.), flat and weak, longer than the lax leaves; heads small and globular or oblong, dull dark brown, the spikes often somewhat distinct, very short; perigynium spreading, about the length of, or somewhat longer than, the ovate-lanceolate muticous brown scale." Cedar Hill, near Victoria; Nanaimo; and Mount Mark, near Qualicum, Vancouver Island. (*Macoun.*) Alaska. (*Chamisso.*)

Var. **gracilis,** Olney; Macoun, Cat. IV., 120.

In grassy thickets at Agassiz, B.C., May 10th, 1889. (*Macoun.*)

(3192.) **C. illota,** Bailey, Mem. Torr. Bot. Club, I., 15.

C. Bonplandii, Kunth? var. *minor,* Boott, Proc. Acad. Phila. (1863), 77.
C. Bonplandii, var. *angustifolia,* W. Boott, Bot. Calif. II., 233. (1880.)

"Distinguished from small forms of *C. festiva,* Dew., as follows:—Very slender and usually tall (6 in. to 19 in.), the head very small and globular or short-oblong (⅓ in. or less in diameter); perigynium completely marginless, thick below, stipitate, nerved, entirely smooth on the edges, the cylindrical and scarcely-cut beak projecting beyond the obtuse or muticous dark brown scale. The perigynia are considerably like those of the *C. canescens* group. This species stands midway between *C. festiva* and *C. heleonastes.*" By little pools on the mountains north of Griffin Lake, B.C., at an altitude of 6000 feet, Aug. 1889. (*Macoun.*)

(2551.) **C. synchnocephala,** Carey; Macoun, Cat. IV., 121.

In damp spots on the flat land north of the Ferry, at Kamloops, B.C., June 22nd, 1889. (*Macoun.*)

(2554.) **C. remota,** Linn.; Macoun, Cat. IV., 122.

Professor Bailey writes me that this species is of very doubtful occurrence in Canada, so we cancel it.

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(3193.) **C. Eleocharis,** Bailey, Mem. Torr. Bot. Club, I., 6.

"One of the *Vigneæ*, perhaps allied to *C. tenella*, Schk.; very slender but stiff, half a foot high, both leaves and culm filiform and smooth; spikes two or three, each bearing from one to three flowers, closely aggregated into a very small and apparently monostachyous head, evidently staminate above; perigynium short-ovate, turgid, flat on the inner face, marginless and nerveless, dull brown, beak entire or nearly so, as long as or longer than the thin hyaline scale." Collected on the Saskatchewan Plains, near Fort Carleton, in August, 1872. Col. Olney named it *C. glareosa*, and under this name it was distributed. It has never been seen since, but often looked for. (*Macoun.*)

(2557.) **C. canescens,** Linn., var. **polystachya,** Boott; Rich. Jour., II., 344.

C. arcta, Boott; Macoun, Cat. IV., 124, in part.

Erect and mostly strict, not glaucous, 1½ to 2½ feet high; leaves very lax and usually exceeding the culm; spikes oblong, green, more or less aggregated into a loose head, the lowest one or two subtended by a short and hyaline broad-based and pointed or caudate bract; perigynium more spreading than in the species.

All eastern references to *C. arcta*, in Part IV., belong here. The western to the next variety.

Var. **Oregana,** Bailey, Mem. Torr. Bot. Club, I., 75.

C. arcta, Boott; Macoun, Part IV., 125, in part.

"Head larger and more dense than in the var. *polystachya*, becoming brown; spikes loosely flowered, the perigynia sometimes spreading in a stellate manner; perigynium narrow, often almost linear-lanceolate, brown-nerved, sharp edged and rough above." Very abundant in ditches at Hastings, B.C.; and Victoria and Nanaimo, Vancouver Island. (*Macoun.*) Cedar Hill, near Victoria, V. I. (*Fletcher.*) Vancouver City, Burrard Inlet, B.C. (*Prof. Fowler.*)

Var. **robustina,**

A very tall form growing in clumps in boggy places. Spikes 6 to 8, generally 7, often half an inch long, tapering at the base, lower spikes distant and peduncled, the latter four forming an oval head, lower with a short setaceous bract, whole head with a light silvery hue. In damp woods at Port Haney, B.C., May 1st, 1889. (*Macoun.*) Burnaby Lake, near Hastings, B.C., April, 1889. (*J. M. Macoun.*)

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Var. **brunnea,**

Low and slender, scarcely a foot high, growing in tufts in ditches. Spikes brown, scattered, 3 to 5, generally 4, small, but elongated, the upper often half staminate; lower bract seldom longer than the spike. The scattered light-brown, elongated, spikes distinguish this variety from all other forms of the species. Port Haney and Port Moody, B.C., May 3rd, 1889. (*Macoun.*)

(2565.) **C. Liddoni,** Boott; Macoun, Cat. IV., 128.

Fine specimens were collected at Lytton and Spence's Bridge on the Thompson River, B.C., May, 1889. (*Macoun.*)

(2566.) **C. pratensis,** Drej., var. **furva,** Bailey, MS.

C. pratensis, Macoun, Cat. IV., 128, in part.

"Spikes much larger than in the type ($\frac{1}{2}$ in. or more long), more loosely flowered, dark brown. The culms appear to be more sharply angled, also." (*Bailey.*) Not uncommon in damp meadows at Cedar Hill, Goldstream, and throughout southern Vancouver Island, May 27th and 31st, 1887. (*Macoun.*)

(2567.) **C. fœnea,** Willd., Enum. Pl. Hort. Berl., 957. (1809.)

C. adusta, Macoun, Cat. IV., 129, in part.

"Culm slender and often weak (1 to 2 feet high); head long and weak; spikes five to eight, small and silvery green, much contracted below and alternately disposed; perigynium varying from ovate to long-ovate, thin, much longer than the small achenium, prominently rough-margined, strongly many-nerved on both sides; bracts entirely wanting or very inconspicuous." In the valley of Eagle River at Griffin Lake, B.C., July 7th, 1889. (*Macoun.*)

Var. **perplexa,** Bailey; Mem. Torr. Bot. Club, I., 27.

C. adusta, Macoun, Cat. IV., 129, in part.

"Mostly taller and stouter than the species, the spikes larger and less attenuated or even truncate below, more approximate or even aggregated, the head erect or nearly so and the lowest bract sometimes prominent." Burnt woods, North Hastings, Ont., and near the Lake of the Woods. (*Macoun.*)

(2568.) **C. adusta,** Boott; Hook. Fl. II., 214.

References under *C. pinguis,* Bailey, Part IV., 129, belong here.

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(2572.) **C. straminea,** Willd.; Bailey, Mem. Torr. Bot. Club, I., 31.

C. straminea, var. *tenera*, Macoun, Cat. IV., 132.

This includes the lax forms hitherto included in var. *tenera*. In thickets at Agassiz and Shuswap Lake, B.C. 1889. (*Macoun.*)

Var. **brevior,** Dewey; Bailey, Mem. Torr. Bot. Club, I., 22.

References under *C. straminea* and var. *festucacea*, Macoun, Cat., IV., 131-132, belong here.

Var. **cumulata,** Bailey, Mem. Torr. Bot. Club, I., 23.

C. straminea, var. *alata*, Macoun, Cat. IV., 133.

"Culm very tall and stiff; spikes several to many (sometimes 25 !), greenish, usually aggregated into a bunchy head, very densely flowered and squarely contracted at the base, short and pointed, spreading; perigynium appressed, the points therefore not conspicuous."

(3194.) **C. silicea,** Olney; Bailey, Mem. Torr. Bot. Club, I., 24.

C. straminea, var. *moniliformis*, Tuckerman; Macoun, Cat. IV., 133.

All references in Part IV., 133, under the above variety, belong here.

(2573.) **C. Preslii,** Steud.; Bailey, Mem. Torr. Bot. Club, I., 52.

C. leporina, L., var. *Americana*, Olney; Macoun, Cat. IV., 133.

Prof. Bailey says that the synonym *C. petasata*, Dew., should not have been placed here in Part IV. All our own specimens go here. Summit of Mount Queest, Gold Range, B.C. Alt. 6000 feet, 1889. (*J. M. Macoun.*) Gold Range, north of Griffin Lake, B.C. Alt. 6500 ft. 1889. (*Macoun.*)

(2574.) **C. bicolor,** Allioni; Macoun, Cat. IV., 134.

Of a specimen received from Mr. J. Brittain, Fredericton, New Brunswick, which we doubtfully referred here, Professor Bailey writes: "It has many of the characteristics of *C. bicolor*, but I should prefer to call it *C. aurea* until more material accumulates." It is retained here until New Brunswick collectors get more material. Upper Restigouche River, N.B., July, 1883. (*Brittain.*)

(2578.) **C. atrata,** Linn., var. **ovata,** Boott; Macoun, Cat. IV., 135.

"Habitually more slender than the species and usually lower, spikes small or oblong-ovate, reddish-brown, slenderly peduncled." This form

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includes all our herbarium specimens collected between the Atlantic Coast and the Rocky Mountains. Mountain specimens are placed under *C. atrata*, as they are identical with Greenland specimens, having the heads short peduncled and closely aggregated, while the scales are deep black without any tinge of red. The specimens referred to *C. atrata*, var. *nigra*, in Part IV., are placed with the species, and the variety disappears, as Prof. Bailey erects Olney's variety into a species named *C. nova*. All our specimens are more or less peduncled, and hence are excluded.

(2581.) **C. Parryana,** Dew.; Macoun, Cat. IV., 136.

In dry thickets along Shuswap Lake, at Scotch Creek, B.C., June, 1889. (*Macoun.*)

(2591.) **C. aurea,** Nutt., var. **celsa,** Bailey, Mem. Torr. Bot. Club, I., 75.

C. aurea, Nutt.; Macoun, Cat. IV., 138, in part.

"Taller than the species (15 to 20 in. high), and strict spikes large and compactly flowered, evenly cylindrical, longer peduncled." Somenos, and Horne Lake at Qualicum, Vancouver Island, 1887. (*Macoun.*)

(2592) For **C. albata,** Bailey, Macoun, Cat. IV., 139, read **C. ablata,** Bailey.

(2594.) **C. debilis,** Mx., var. **Rudgei,** Bailey, Mem. Torr., Bot. Club, I., 34.

References under *C. debilis*, Mx., Part IV., 139, belong here. "The common northern form." (*Bailey.*)

(2595.) **C. flava,** Linn., var. **viridula,** Bailey, Mem. Torr. Bot. Club, I., 31.

References under *C. Œderi*, Retz., Part IV., 140, belong here.

(2597.) **C. nudata,** W. Boott, var. **angustifolia,** Bailey, Mem. Torr. Bot. Club, I., 16.

References under *C. cæspitosa*, Linn., and var. *filifolia*, Boott, Part IV., 141, belong here.

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(2598.) **C. vulgaris,** Fries, var. **strictiformis,** Bailey, Mem. Torr. Bot. Club, I., 74.

C. vulgaris, Macoun, Cat. IV., 142, in part.

"Tall and lax (1½ to 2½ ft. high), the leaves long and narrow; staminate spike longer peduncled; pistillate spikes looser and often longer than in the species, the perigynia never being so densely packed and usually becoming browner." Lower St. Lawrence. (*Pringle,* fide *Bailey.*) North-west Arm Ferry and Point Pleasant, Halifax, N.S.; also at the mouth of Madalene River, Gaspé Coast, Q. (*Macoun.*)

(2599.) **C. decidua,** Boott; Macoun, Cat. IV., 143.

The specimens from Rogers Pass, Selkirk Mountains, belong here. It turns out to be a common species in British Columbia, and seems as much at home at 1100 feet altitude as at 6000. Mount Queest, Gold Range, B.C. (*J .M. Macoun.*) On the Gold Range north of Griffin Lake, alt. 6000 feet; shore of Shuswap Lake, and along the Thompson to Kamloops, quite common. (*Macoun.*) Professor Bailey writes that the present arrangement of specimens under this species is provisional. It is the Pacific representative of *C. vulgaris.*

(2600.) **C. invisa,** Bailey; Macoun, Cat. IV., 143.

Common along Queest Creek, Shuswap Lake, B.C. Alt. 5000 feet. (*J. M. Macoun.*) Mountains north of Griffin Lake, Gold Range, B.C. Alt. 6000; also along Spallumsheen Arm, at Sicamous, B.C. 1200 feet alt. 1889. (*Macoun.*)

(3195.) **C. variabilis,** Bailey, Mem. Torr. Bot. Club, I., 18.

C. aquatilis, Macoun, Cat. IV., 143, in part.

"Glaucous; mostly low (2 feet or less high), stout, culm sharply angled, roughish on the angles; leaves rather broad (as compared with *C. stricta,* Lam.); spikes three or four, short and stout (2 in., or less, long), borne near the top of the culm, erect, the lower one or two conspicuously attenuated at the base, and appearing clavate, the upper sessile, lower peduncled; bracts leaf-like and broad, the lower one or two equalling or exceeding the culm; perigynium small and broadly ovate, abruptly and very short beaked, nerveless, beak entire, green or whitish, conspicuously broader and usually shorter than the obtuse or muticous black scale." Old Wives' Lakes, Assiniboia; along Bow River at Calgary, Alberta. (*Macoun.*)

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Var. **elatior,** Bailey, l.c.

"Much taller, the leaves very long, and narrower; spikes longer (often 3 to 4 in.) and more slender, the lower much attenuated below, the upper bearing conspicuous staminate portions; bracts long and narrow." Open thickets at Morley, foot-hills of Rocky Mountains; Kicking Horse Lake, Rocky Mountains, and Donald, in the Columbia Valley; near Cedar Hill, Victoria, Vancouver Island. (*Macoun.*)

(2601.) **C. Nebraskensis,** Dew., var. **prævia,** Bailey, Mem. Torr. Bot. Club. I., 49.

References under *C. Jamesii*, Torrey, Part IV., 143, belong here, and the synonym *C. compacta*, should not have been placed under this species.

(3196.) **C. aperta,** Boott; Hook., Fl., II., 218, 219.

Fifty miles up the North Thompson River, above Kamloops, B.C. 1889. (*J. M. Macoun.*) By a lake near Fort St. James, northern British Columbia, June, 1875; abundant at Shuswap Lake and Agassiz, B.C. 1889. (*Macoun.*)

(2605.) **C. acutina,** Bailey, Mem. Torr. Bot. Club, I., 52.

C. acuta, Linn.; Macoun, Cat. IV., 146.

"A fine suite of specimens of *Carex acuta* given me by Arthur Bennett, Croydon, England, and a study of the species in various foreign herbaria, have enabled me to draw lines of separation between the European plant and the western plants which have been referred to it. *C. acutina* differs from *C. acuta* in the pale color of the plant and its lesser size and thin leaves, habitually smaller spikes, thinner and shorter perigynium, which is much less prominently nerved, and the lighter colored obtuse or muticous scales." (*Bailey.*) Lewes River, Lat. 62°, N.W.T., 1887. (*Dawson.*)

(2608.) **C. salina,** Wahl.; Bailey, Mem. Torr. Bot. Club, I., 45.

References under *C. salina*, Wahl., var. *mutica*, Wahl., Part IV., 147, belong here.

Var. **cuspidata,** Wahl.; Bailey, Mem. Torr. Bot. Club, I., 46.

References under *C. salina*, Wahl., Part IV., 146, belong here.

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(3197.) **C. Macounii,** A. Bennett; Bailey, Mem. Torr. Bot. Club, I., 45.

C salina, var. (?) *robusta*, Bailey; Macoun, Cat. IV., 147.

See description and notes on page 147.

(2611.) **C. cryptocarpa,** Meyer, var. **pumila,** Bailey, Mem. Torr. Bot. Club, I., 27.

C. cryptocarpa, Macoun, Cat. IV., 148 in part.

"Low (6 to 12 in. high); pistillate spikes, commonly two, short ($\frac{3}{4}$ in. or less), ovate or short-oblong; scales broad and muticous, but little longer than the much lighter colored perigynium.'" Queen Charlotte Islands. (*Dawson.*) Vicinity of Victoria, Vancouver Island. (*Fletcher.*) Gordon Head, Nanaimo, Qualicum and Comox, Vancouver Island; common in salt marshes along Burrard Inlet, B.C. 1889. (*Macoun.*)

(2613.) **C. Barbaræ,** Dew.; Macoun, Cat. IV., 148.

Quite common on the border of Burnaby Lake, and eastward in marshes to Griffin Lake, in the Gold Range, B.C. 1889. (*Macoun.*)

(2620.) **C. Raynoldsii,** Dew.; Macoun, Cat. IV., 151.

In a mountain valley north-west of Spence's Bridge, B.C. 1889. (*J. M. Macoun.*)

(2627.) **C. Salterensis,** Bailey, Mem. Torr. Bot. Club, I., 7.

C. vaginata, Tausch.; Macoun, Cat. IV., 153.

Professor Bailey separates this species from the European *C. vaginata* by its much more slender and less cæspitose habit, narrower leaves and less conspicuous sheaths, its alternately-flowered spikes, and its much smaller, less inflated, and conspicuously nerved perigynium. All references in Part IV., 153, belong here. Low ground near Hamilton, Ont., 1889. (*Burgess.*)

(2636.) **C. laxiflora,** Lam.; Macoun, Cat. IV., 155.

Professor Bailey has revised this species and finds the type to be what we have been calling *C. laxiflora*, var. *intermedia*, Boott. It embraces slender plants, characterized by narrow leaves (usually less than $\frac{1}{4}$ in. in width), a peduncled, or at least very conspicuous staminate spike, scattered pistillate spikes, which are very loose flowered and

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narrow (½ to 1½ in. long), and very blunt perigynium. This includes both the type and var. *intermedia* of Part IV., 155. The synonymy may be considered cancelled, as it only refers in part to the type.

(2637.) **C. Hendersoni,** Bailey.

Not uncommon in woods and open thickets between Yale and the coast of British Columbia, 1889. (*Macoun.*)

(2638.) **C. laxiculmis,** Schweinitz; Bailey, Mem. Torr. Bot. Club, I., 47.

C. retrocurva, Dew.; Macoun, Cat. IV., 156, in part.

"Distinguished by its glaucousness." (*Bailey.*)

(2639.) **C. digitalis,** Willd., var. **copulata,** Bailey, Mem. Torr. Bot. Club, I., 47.

C. retrocurva, Macoun, Cat. IV., 156, in part.

"Larger than in the species, the culm weak and reclining, sometimes two feet long; leaves twice or thrice broader; spikes shorter and heavier; perigynium mostly larger. In aspect much like *C. laxiculmis,* but has no glaucousness, the upper spikes are shorter peduncled." (*Bailey.*) Wet ravines, London, Ont., June 24th, 1881. (*Burgess.*)

(2647.) **C. Pennsylvanica,** Lam., var. **vespertina,** Bailey, Mem. Torr. Bot. Club., I., 47.

C. Pennsylvanica, Macoun, Cat. IV., 158, in part.

"Habitually taller than the species, very slender; staminate spike commonly slimmer and usually very short-peduncled; pistillate spikes more separated and the lowest subtended by a leafy bract from one half inch to one inch long; perigynium mostly larger, more hairy, the beak longer and stouter." This form includes all our British Columbia and Vancouver Island specimens of *C. Pennsylvanica.*

(2648.) **C. communis,** Bailey, Mem. Torr. Bot. Club, I., 41.

Reference under *C. varia,* Muhl., Part IV., 159, except those given below, belong here.

Var. **Wheeleri,** Bailey, Mem. Torr. Bot. Club, I., 41.

C. varia, Macoun, Cat. IV., 159, in part.

"Mostly lower than the species; leaves very numerous, very broad and bright green, conspicuously shorter than the culm; staminate

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spike very short (usually only a fourth or a third of an inch long), closely sessile-inclined and inconspicuous; lowest bract leaf-like, often an inch or two long." On the sides of ravines, Truro, and Pirate's Cove, Strait of Canso, N.S. 1883. (*Macoun & Burgess.*)

(2649.) **C. varia,** Muhl., in Wahl.-Kongl. Acad. Handl., XXIV., 159. (1803.) Bailey, Mem. Torr. Bot. Club, I., 40.

References under *C. Emmonsii*, Dewey, Part IV., 159, belong here.

(2650.) **C. Novæ-Angliæ,** Schw.; Bailey, Mem. Torr. Bot. Club, I., 44.

C. Novæ-Angliæ, Macoun, Cat. IV., 160, in part.

"Very slender, stoloniferous, the culms 6 to 8 inches high, about the length of the very narrow loose leaves; staminate spike quite distinct, erect and prominent, 3 to 8 lines long, mostly minutely peduncled, exceedingly narrow (about half a line broad); pistillate spikes usually two, the upper near the base of the staminate spike, the lower from ½ to 1 inch removed and short-stalked and subtended by a bract which nearly or quite equals the culm, both rather loosely three to six-flowered; radical spikes none; perigynium very narrow, often nearly oblanceolate, very thinly hairy, the sharp beak prominent; stigmas often two." In damp woods, Point Pleasant, Halifax, N.S. (*Burgess & Macoun.*) Grassy places at Cove Head and Brackley Point, Prince Edward Island. (*Macoun.*) Woods near St. Martin, N.B. 1888. (*Brittain.*)

(3198.) **C. deflexa,** Hornemann; Bailey, Mem. Torr. Bot. Club, I., 41.

C. Novæ-Angliæ, Macoun, Cat. IV., 160, in part.

"Very low, much tufted; culms from 1 to 6 inches long, setaceous more or less curved or spreading, little exceeding or shorter than the narrow leaves; staminate spike exceedingly minute and nearly always invisible in the head; pistillate spikes two or three, two to five-flowered, green or green-and-brown, all aggregated into a small head, the lowest one always more or less short-peduncled and subtended by a leafy bract, a half inch or less long; radical spikes very few or none; perigynium very small, much contracted below, sparsely hairy or nearly smooth, the flat beak exceedingly short." On sandy or rocky places near water, Gaspé Peninsula, Q. (*Macoun.*) Portage, Kent Co., N.B. (*Brittain.*)

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Var. **Deanii,** Bailey, Mem. Torr. Bot. Club, I., 42.

C. Novæ-Angliæ, Macoun, Cat. IV., 160, in part.

"Taller and laxer, the culms from 6 to 12 inches high and some or all prominently exceeding the long, loose, soft leaves; staminate spike much larger (2 to 3 lines long), erect or oblique, strictly sessile; pistillate spikes larger (four to eight-flowered), less aggregated or the lowest usually separated, though rarely more than a quarter of an inch removed; radical spikes usually numerous; bract mostly longer. Macnab's Island, Halifax Harbor, and Truro, N.S.; crevices of rocks, Brackley Point, Prince Edward Island; Sudbury Junction and Port Arthur, Ont. (*Macoun.*)

Var. **media,** Bailey, Mem. Torr. Bot. Club, I., 43.

C. Novæ-Angliæ, var. *deflexa*, Bailey; Macoun, Cat. IV., 160.

"Rather stiff, 4 to 12 inches high, in dense tufts; most of the culms somewhat exceeding the leaves; staminate spike prominent and erect, 3 to 5 lines long, sessile or very short peduncled; pistillate spikes two or three, all scattered, the uppermost at, or near, the base of the staminate spike, the lowest very prominently peduncled and subtended by a conspicuous bract which surpasses the culm, all rather compactly, three to eight-flowered, green, or brown-green; radical spikes usually abundant; perigynium much as in short-beaked forms of *C. umbellata*; scales large and sharp equalling or exceeding the perigynium." Grassy thickets, McLeod's Lake, and Telegraph Trail, B.C.; also on Mount Arrowsmith, Vancouver Island. Alt. 5500 feet. (*Macoun.*)

Var. **Rossii,** Bailey, Mem. Torr. Bot. Club, I., 43.

C. Novæ-Angliæ, var. *Rossii*, Bailey; Macoun, Cat. IV., 160.

"Stiff throughout, very strict, the leaves mostly equalling or exceeding the culms, the whole plant usually light-colored; staminate spike much as in the last, often larger; pistillate spikes one to three, distinct or sometimes scattered, loosely one to four-flowered; radical spikes usually abundant; scales very sharp, greenish-white or very rarely bearing an inconspicuous colored margin." In woods, from the Pacific coast to Spence's Bridge. (*Macoun.*)

(3199.) **C. amplifolia,** Boott; Hook. Fl. II., 228, t. 226.

In abundance in and around springs in woods Vernon, near Lake Okanagan, B.C. 1889. (*Macoun.*)

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(2655.) **C. castanea,** Wahl.; Gray, Man., ed. VI., 603.

References under *C. flexilis*, Rudge, Part IV., 162, belong here.

(2658.) **C. capillaris,** Linn.; Macoun, Cat. IV., 163.

C. capillaris var. *Krausei*, Macoun, Cat. IV., 163.
C. Saskatchewana, Macoun, Cat., IV., 163.

Prof. Bailey having examined the specimens upon which these forms were founded, refers them both here.

(2671.) **C. lupulina,** Muhl. (1805); Bailey, Mem. Torr. Bot. Club, I., 11.

References under *C. lurida*, Wahl., Part IV., 167, belong here. Prof. Bailey shows that *C. lurida*, properly belongs to *C. tentaculata*.

Var. **Bella-villa,** Bailey, Mem. Torr. Bot. Club, I., 12.

References under *C. lurida*, var. *divergens*, Bailey, Part IV., 168, belong here.

Var. **pedunculata,** Dewey; Bailey, Mem. Torr. Bot. Club, I., 12.

References under *C. lurida*, var. *polystachya*, Bailey, Part IV., 168, belong here.

(2673.) Since writing the article under this number, Part IV., 168, we have received specimens of *C. Raeana* (named by Boott), from the British Museum, and can make nothing of it except an immature specimen of *C. oligosperma*. In the summer of 1888, J. M. Macoun collected on Methy Portage many specimens of both *C. oliogosperma* and *C. monile*. Prof. Bailey in Mem. Torr. Bot. Club, Vol. I., 39, makes *C. Raeana* a variety of *C. monile*. It is very probable that Boott had young specimens of *C. oligosperma* and *C. monile* before him when he characterized the species he named *C. Raeana*. The description of Prof. Bailey combines the spikes of *C. monile* and the leaves of *C. oligosperma*, and the compound is Boott's *C. Raeana*. Prof. Bailey writes me that "The type of *C. Raeana*, in Herb. Boott, is clearly different from *C. oligosperma*." Whatever it is there is no evidence that it is a good species, and may be, as I state above a compound of *C. monile* and *C. oligosperma*.

(2674.) **C. miliaris,** Michx.; Bailey, Mem. Torr. Bot. Club, I., 35.

C. miliaris, Michx. . Macoun, Cat. IV., 199, in part.
C. Raeana, Boott; Macoun, Cat. IV., 168, in part.

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. Below is Prof. Bailey's arrangement of the species, and I agree with his remark that "whatever future observers may decide as to the merits of the varieties I propose, the disposition suggested cannot fail to make the species better known." My difficulties are all cleared away by the arrangement, but var. *major* may be Michaux's type.

"Culm very slender but erect (12 to 18 in. high), smooth or slightly rough above on the angles; leaves narrow, often almost filiform, rough on the edges, mostly shorter than the culm; staminate spikes one or two, elevated an inch or more from the upper pistillate spike, very narrow, an inch or less long; pistillate spikes one to three, the upper one sessile and the lower very short-stalked, small ($\frac{3}{4}$ in. or less long), the lowest subtended by a bract which usually exceeds it; perigynium very small, broadly or round-ovate or ovate-oblong; thin but firm in texture, bearing a nerve upon either angle, but otherwise nerveless or sometimes bearing a few very faint nerves near the base, rounded into a very short and terete beak which is either entire or somewhat erose; pistillate scales brown, lance-ovate, ending in a sharp whitish tip which nearly or quite equals the perigynium." Island in the Saguenay River, near Lake St. John, Que. (*A. H. Smith.*) Drury's Cove, St. John, N.B. (*Herb. Gray.*) Near St. John, N.B., 1877. (*Prof. Fowler.*) Newfoundland. (*La Pylaie, Herb. Gray.*)

Var. **obtusa,** Bailey, Mem. Torr. Bot. Club, I., 36.

"Culm mostly shorter and even more slender; pistillate spikes much smaller (from $\frac{1}{3}$ in. long to smaller and globular), closely sessile; pistillate scale very obtuse, little if any more than half the length of the perigynium." Marguerite River, Que. (*A. H. Smith*, fide *Bailey.*) One small specimen received from Prof. Fowler, collected at Kennebeckasis, N.B, June 30th, 1878, is this variety. The others are the type. (*Macoun.*)

Var. **major,** Bailey, Mem. Torr. Bot. Club, I., 36.

"Much stouter (often fully two feet high), the culm thick and very sharply angled; leaves stout and canaliculate or involulate; staminate spikes short stalked; pistillate spikes one to five, mostly short-oblong, but often cylindrical (varying from $\frac{1}{3}$ to $1\frac{1}{2}$ in. long), stout and very dark and dull-brown, the lower one or two short-peduncled; scale varying from wholly obtuse to muticous." Lake Mistassini, N.E.T., 1885. (*J. M. Macoun.*) Jupiter River, Anticosti, Q., 1883. (*Macoun.*) Ungava Bay, Labrador, 1884. (*Turner.*)

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Var. (?) **aurea,** Bailey, Mem. Torr. Bot. Club, I., 37.

"Taller and mostly stouter than the species; staminate spikes two to three, mostly long-peduncled; pistillate spikes one or two, the upper sessile, the lower short-peduncled, often staminate at the apex, yellow or stramineous; perigynium thin and yellow as in *C. monile*, mostly prominently few-nerved, gradually produced into a conspicuous and more or less toothed beak, broader and usually longer than the light brown or whitish muticous scale." Kennebeckasis, N.B. (*Prof. Fowler*, fide *Bailey.*)

(2675.) **C. physocarpa,** Presl.; Macoun, Cat. IV., 169.

Sparingly along Spallumsheen Arm, at Sicamous, B.C., July, 1889. (*Macoun.*)

(2679.) **C. utriculata,** Boott; Hook. Fl. II., 221. (1840.)

References under *C. rostrata*, With., and its variety *utriculata*, Bailey, Part IV., 170, 171, belong here. Specimens referred here were collected in an immature state at Agassiz, B.C., May, 1889. (*Macoun.*)

(3200.) **C. exsiccata,** Bailey, Mem. Torr. Bot. Club, I. 6.

C. vesicaria var. *major*, Boott; Macoun, Cat. IV., 171, in part.

"Differs at once from *C. vesicaria* by its greater size and broader leaves, thicker and more nearly sessile spikes, and particularly by the much longer, lance-ovate, scarcely inflated, duller and strongly nerved perigynium, which is three or four times longer than the very narrow and muticous scale. In some of its forms it strongly suggests *C. trichocarpa*, Muhl., var. *aristata*, Bailey." Wet marshy places, near Victoria, Vancouver Island, 1885. (*Fletcher.*) Common and variable everywhere on Vancouver Island, 1887; on the mainland of British Columbia, from the coast to the Gold Range. (*Macoun.*)

Var. **globosa,** Bailey, Mem. Torr., Bot. Club, I., 7.

C. vesicaria var. *major*, Macoun, Cat. IV., 171, in part.

"More slender than the species, the leaves narrow ($\frac{1}{3}$ in. or less wide); spikes small (an inch or less long), more or less scattered, closely sessile, rusty in color; perigynium narrower, conspicuously spreading; scale hyaline and very small." Horne Lake, near Mount Mark, Vancouver Island. 1887. (*Macoun.*)

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Var. **pungens,** Bailey, Mem. Torr. Bot. Club, I., 7.

C. vesicaria, var. *major,* Macoun, Cat. IV., 171, in part.

"Slender; spikes narrowly cylindrical (the size of a pencil) one to two inches long, usually dark colored; scales firm, very sharp-pointed, half or a third as long as the the perigynium." Wet places at Cowichan, Nanaimo and Cameron Lake, Vancouver Island, 1887; common in swamps at Port Hammond, Agassiz, and eastward to Craigellachie, Eagle River, B.C. (*Macoun.*)

(2684.) **C. lurida,** Wahl.; Bailey, Mem. Torr. Bot. Club, I., 10.

References under *C. tentaculata,* Muhl., Part IV., 173, belong here.

(2687.) **P. Pseudo-Cyperus,** Linn., var. **Americana,** Hochst.; Bailey, Mem. Torr. Bot. Club, I., 54.

References under *C. Pseudo-Cyperus,* var. *comosa,* W. Boott, Part IV., 174, belong here.

674. PANICUM.

(3201.) **P. nitidum,** Lam., var. **barbulatum,** Michx.

Not uncommon at Kamloops and along the shores of Shuswap Lake, B.C. June, 1889. (*Macoun.*)

676. SPARTINA.

(2713.) **S. gracilis,** Trin.; Macoun, Cat. IV., 182.

Common in saline, boggy places at and around Kamloops, B.C., 1887. (*Macoun.*)

684. ALOPECURUS.

(2730.) **A. geniculatus,** Linn., var. **cæspitosus,** Scribner, MS.

A. Macounii, Vasey, Macoun, Cat. IV., 189 = *A. Howellii* and *A. saccatus,* Vasey.

"Culms low (2 to 6 in.), erect, panicles ¼ to 1 in. long, uppear sheaths sometimes inflated."

"The spikelets are the same as in *A. geniculatus,* Linn. Perhaps a couple of *sub-varieties* could be made on the varying length of the leaves, but we do not carry matters that far in this country." (*Scribner.*) On the old waggon road, at the first tunnel, as it rounds the bluff at

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Yale, B.C., May, 1889. We agree with Mr. Scribner in making this a var. of *A. geniculatus*. (*Macoun.*) Prof. Scribner remarks of var. *robustus*, Vasey, that it is just a stout grown plant of the species.

685. ARISTIDA.

(2736.) **A. fasciculata,** Torr.

A. purpurea, Nutt.; Macoun, Cat. IV., 190 = (*A. purpurea*, Nutt., var. = No. 336, Scribner, Montana Coll.)

Abundant at Spence's Bridge, B.C. 1889. (*Macoun.*)

686. STIPA.

(2739.) **S. Macounii,** Scribner, MS.

S. Richardsonii, Macoun, Cat. IV., 190.

"This is the *Stipa Richardsonii* of Gray's Manual, but I think *not of* Link. Your *S. Richardsonii*, var. *major*, is, I believe, *Stipa Richardsonii*, Link. I look upon the eastern plant, with its smaller panicle and spikelets, as a distinct species, and beg leave to name it *S. Macounii*." (*Scribner.*) This species includes all the references under *S. Richardsonii* in Part IV. (*Macoun.*)

(3202.) **S. Richardsonii,** Link.

S. Richardsonii, var. *major*, Macoun, Cat. IV., 191.

Not uncommon along the north shore of Shuswap Lake, near Scotch Creek, B.C., June, 1889. (*Macoun.*)

(2740.) **S. spartea,** Trin.; Macoun, Cat. IV., 191.

Abundant in many places on the hills around Kamloops and towards Nicola Lake, June, 1889. (*Macoun.*)

(2742.) **S. Columbiana,** Macoun, Cat. IV., 191.

Distinguished from *S. viridula* by its acute callus and short palea, this being scarcely half as long as its glume. (*Scribner.*) Not uncommon in tufts on the flats at Kamloops, B.C., June, 1889. (*Macoun.*)

S. —— ? (No. 18.)

"This = 613, Tweedy, 1885, and referred by me to *S. viridula*, from which I now think it is distinct. Must study it more. Perhaps it is not separable from *S. Columbiana*." (*Scribner.*) My Yale specimens

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referred in Part IV. to *S. Columbiana*, belong here, if this proves a distinct form. No. 18, of 1889, was gathered at Yale, B.C. (*Macoun.*)

(2738.) **S. comata,** Trin. & Rupr.; Macoun, Cat. IV., 190; No. 20 Macoun, 1889 = 338 Scribner; 201 M. E. Jones (Colorado); 49 Rusby (Arizona); 1625 Henderson (Oregon); and 37 Tweedy (Washington).

"Awn 5½ inches long, flowering glumes with callus 7 inches long." (*Scribner.*) My No. 20 was growing in abundance in tufts on dry flats at Spence's Bridge, B.C., May, 1889. (*Macoun.*) "No 19 is the same species but the awns are only about 4 inches long, flowering glume including callus 5 inches long." (*Scribner.*) No. 19 was abundant in the same situation at Kamloops, B.C., June, 1889. (*Macoun.*)

687. ORYZOPSIS.

(2746.) **O. cuspidata,** Benth.; Macoun, Cat. IV., 193.

Abundant on the sandy soil just across Spence's Bridge (on the north side), B.C., May, 1889. (*Macoun.*)

689. MUEHLENBERGIA.

(2749.) **M. glomerata,** Trin.; Macoun, Cat. IV., 194.

Rather common in grassy thickets at Agassiz, B.C., July, 1889. (*Macoun.*)

693. SPOROBOLUS.

(2757.) **S. asperifolius,** Thurber; Macoun, Cat. IV., 197.

On saline flats south of Kamloops, B.C., June, 1889. (*Macoun.*) "Spikelets sometimes 2-flowered, second flower pedicellate and imperfect." (*Scribner.*)

(2758.) **S. cryptandrus,** Gray; Macoun, Cat., IV., 197.

On arid soil at Spence's Bridge, and at Trout Creek at the southern end of Lake Okanagan, B.C., July, 1889. (*Macoun.*)

694. AGROSTIS.

(2763.) **A. canina,** Linn.; Macoun, Cat. IV., 198.

Prof. Scribner says of this species: "This is *A. rubra*, Linn. May be called *A. rubra*, Linn., var. *Americana*. It is the same as *A. rupestris*,

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Chapm. (non All.), found on Roan Mountain, North Carolina. The same plant grows on the White Mountains of New Hampshire (*A. canina*, var. *alpina*, Oakes) together with the true *A. rupestris*, All." (*Scribner.*) Our specimens from Mount Albert, Gaspé, Q., belong to *A. rubra*, var. *Americana*. (*Macoun.*)

(3203.) **A. Macounii,** Scribner, in Herb.

A. canina, Linn., var. *paleata*, Vasey; Macoun, Cat. IV., 198.

"Very distinct from *A. canina*, Linn. Probably a new species and will name it *A. Macounii*." (*Scribner.*)

(2764.) **A. exarata,** Trin.; Macoun, Cat. IV., 198.

Prof. Scribner says of No. 31 collected at Burrard Inlet and New Westminster, B.C., "one of the many forms (or species) referred to *A. exarata*, Trin., by American authors."

(2770.) **A. varians,** Trin.; Macoun, Cat. IV., 200.

Of specimens of this sent to Prof. Scribner, he writes—"'*Agrostis varians*, Trin. = 6054 Bolander.' This certainly does *not* equal 6054 Bolander, of which I have specimens, nor is it *A. varians*, Trin. It may be a small form of *A. exarata*, Trin." These specimens were from Queen Charlotte Islands. (*Macoun.*) Of others he writes—"not *A. varians*. Am not prepared to say what it is. I have the same from Oregon." These specimens were from Adams Lake, B.C. 1888. Collected by Dr. Dawson. Small specimens gathered on Mount Queest and Griffin Lake Mountains of the Gold Range, B.C., at an altitude of 6500 feet are doubtfully referred here by Prof. Scribner. (*Macoun.*)

(3204.) **A. humilis,** Vasey.

"Rootstock creeping, palea $\frac{2}{4}$ as long as its glume and a short naked prolongation of the rachilla." Mount Queest, altitude 6500 feet 1889. (*J. M. Macoun.*) Abundant on mountains north of Griffin Lake in the Gold Range, B.C. 1889. (*Macoun.*)

(2768.) **A. perennans,** Tuck.; Macoun, Cat. IV., 199.

Of Ottawa specimens, Prof. Scribner writes—"*A. perennans*, Tuck., but hardly of Gray's Manual; certainly *Trichodium perennans* of Ell."

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697. CINNA.

(2777.) **C. pendula,** Trin., var. **glomerata,** Scribner.

C. pendula, Trin., var. *acutiflora,* Vasey; Macoun, Cat. IV., 202.

Abundant around springs at Griffin Lake, Gold Range, B.C. 1889. (*Macoun.*)

698. DEYEUXIA.

(2781.) **D. Canadensis,** Hook.; Macoun, Cat. IV., 204.

Prof. Scribner writes of Nos. 34 & 35—"Perhaps *C. Canadensis*; No. 34 = 482 E. Palmer (1887) from Utah; and more exactly a grass I have from the Cascade Mountains, collected by Mr. Frank Tweedy in 1882." No. 34 is from Kamloops; and No. 35 from mountains north of Griffin Lake, B.C. Alt. 6500 feet. 1889. (*Macoun.*)

(2792.) **D. rubescens,** Vasey; Macoun, Cat. IV., 207.

Our specimens, so called, are referred to *D. Suksdorffii,* by Professor Scribner. This species is therefore cancelled.

(2795.) **D. Suksdorffii,** Scribner; Macoun, Cat. IV., 207.

Rather common on rocky hillsides at Sicamous, B.C. 1889. (*Macoun.*)

(3205.) **D. chalybæa,** Fries. ?

Of No. 36, collected at Shuswap Lake and Spence's Bridge, B.C., 1889, Prof. Scribner writes: "No. 36^b = 357, Scribner. This grass seems to me distinct from *C. stricta,* Fries. Judging from descriptions it does not appear to differ from *C. chalybæa,* Fries."

701. DESCHAMPSIA.

(2802.) **D. atropurpurea,** Scheele, var. **minus,** Vasey; Macoun, Cat. IV., 209.

Prof. Scribner says of this that it is "exactly like my European specimens ticketed *Vahlodea atropurpurea.* Certainly no variety."

(2806.) **D. elongata,** Munro; Macoun, Cat. IV., 210.

On dry spots, Cragellachie, Gold Range; on gravel at Penticten, south end of Okanagan Lake, B.C., 1889. (*Macoun.*)

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703. TRISETUM.

(2809.) **T. canescens,** Buckl.; Macoun, Cat. IV., 211.

Not uncommon in thickets at Agassiz, B.C., May, 1889. (*Macoun.*)

(2810.) **T. cernuum,** Trin.; Macoun, Cat. IV., 210.

Not uncommon in thickets at Yale, on the Fraser, and Craigellachie, in the Gold Range, B.C. 1889. (*Macoun.*)

704. AVENA.

(2840.) **A. Smithii,** T. C. Porter; Gray, Man., ed. VI., 653.

"Closely allied to, but distinct from, *Melica aristata*. Neither of these can be referred to *Melica*, and they are no better classified when placed in *Avena*. *Bromelica* (Thurber as a section of *Melica*) might be raised to the rank of a genus, and made to include these and two or three other species which at present are evidently out of place in the genera to which they have been referred. Your No. 52 would then be *Bromelica Smithii*." (*Scribner.*) Rather common in damp thickets at Agassiz, B.C., May, 1887. (*Macoun.*) Prof. Scribner refers my No. 2840 (*Melica aristata*) to this species, so references under it are transferred here.

715. EATONIA.

(2832.) **E. obtusata,** Gray; Macoun, Cat. IV., 218.

Two forms of this species were collected: "(*a*) Culm slender, 40 cm. high, panicle 4 cm. long: green plant, with the aspect of *Kœleria cristata*, and may be named sub-var. *kœlerioides*. (*b*) Culm 90 cm. high, panicle 15 cm. long, interrupted, dark purple." (*Scribner.*) The first form was gathered on the Indian Reservation at Kamloops, B.C.; the second at Griffin Lake, in the Gold Range, B.C. 1889. (*Macoun.*)

(2833.) **E. Pennsylvanica,** Gray; Macoun, Cat., IV., 218.

Borders of ponds south of Kamloops, B.C., June, 1889. (*Macoun.*)

718. MELICA.

(2839.) **M. acuminata,** Bolander; Macoun, Cat. IV., 220.

Grassy thickets at Agassiz, B.C., May, 1889. (*Macoun.*)

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(3206.) **M. spectabilis,** Scribner.

In a mountain valley, north of the Thompson River, between Spence's Bridge and Lytton. 1889. (*J. M. Macoun.*)

723. POA.

(2859.) **P. Eatoni,** Watson?; Macoun, Cat. IV., 225.

On the mountains at Spence's Bridge, B.C., 1889. This is the same species referred to *P. Californica* in Part IV. There is still doubt where this should go. (*Macoun.*)

(2863.) **P. laxa,** Hænke; Macoun, Cat. IV., 225.

Quite common on the mountains north of Griffin Lake, Gold Range, B.C. Alt. 6500 feet. 1889. (*Macoun.*)

(2868.) **P. Nevadensis,** Vasey; Macoun, Cat. IV., 226.

On the mountain side at Yale, at Spence's Bridge, and at Kamloops, B.C. 1889. (*Macoun.*)

(2870.) **P. purpurascens,** Vasey; Macoun, Cat. IV., 226.

Summit of the mountains north of Griffin Lake, B.C. Alt. 6500 feet. 1889. (*Macoun.*)

(2873.) **P. stenantha,** Macoun, Cat. IV., 227.

Prof. Scribner writes me that my specimens of this species are his *Poa Vaseyana*, var. *angustifolia*, Tweedy, 1885. It is *not P. stenantha, R. Brown.*

(2873.) **P. subaristata,** Macoun, Cat. IV., 227.

Of this Prof. Scribner writes—"I have in my herbarium no *P. subaristata.* Your grass is the same as 631 Tweedy (1885 Yellowstone Park Coll.) which I referred doubtfully to *Poa andina*, Nutt. I collected in Montana exactly the same form. Nuttall never published his *Poa andina.* I have never seen and do not know *Poa andina*, Trin. Your grass belongs to a section of the genus not well understood, and one represented by many forms in the Rocky Mountains. The grass you sent me ticketed *Poa andina*, Nutt., var *purpurea*, Vasey, is like the type of *Poa andina*, Nutt., in Nuttall's writing in herb. Phila. Acad. Nat. Sciences."

We have still a few *Poas* undetermined, and hope to have them settled during the coming year.

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727. SCOLOCHLOA.

(2883.) **S. festucacea,** Link.; Gray, Man., ed. VI., 666.

Fluminia arundinacea, Trin.; Macoun, Cat. IV., 229.

Abundant in a marshy meadow, five miles south of Kamloops, B.C. 1889. (*Macoun.*)

728. GLYCERIA.

(2886.) **G. grandis,** Watson; Gray, Man., ed. VI., 667.

G. arundinacea, Kunth.; Macoun, Cat. IV., 230.

Quite common in marshy meadows, five miles south of Kamloops, B.C. 1887. (*Macoun.*)

(2888.) **G. distans,** Wahl., var. **airoides,** Vasey; Macoun, Cat. IV., 231.

Abundant on the borders of saline marshes at Kamloops, and sparingly at Spence's Bridge, B.C. 1889. (*Macoun.*)

729. FESTUCA.

(3207.) **F. subuliflora,** Scribner MS.

F. occidentalis, Macoun, Cat. IV., 235.

Prof. Scribner writes of this—"This (No. 7) is believed to be *F. subulata*, Bong. by Prof. Hækel, but it does not agree so well with his description of that species as your No. 89 (of this year.) It = 1171 and 1367, Henderson, and No. 19, Howell, in my herbarium. Note that the branches of the rather short panicle are all solitary, that the curved callus of the following glume is remarkably long and is covered with a few short stiff hairs, that the edges of the flowering glume are ciliate with a few scattered hairs near the base, and that the joints of the rachilla are also ciliate-scabrous. The panicle branches are shorter than in your No. 89, the leaves are shorter, of much firmer texture and pubescent on the upper surface. I will name this grasss provisionally *F. subulifolia.*" This is the Vancouver Island plant.

(3208.) **F. subulata,** Bong.? No. 89 of 1889.

"Panicles nodding, the long and slender lower branches in pairs; callus much shorter than in No. 7, and with the joints of the rachilla simply scabrous. Flowering glumes 3-nerved. In No. 7, the flowering

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glumes are 5-nerved, the intermediate nerves, however, indistinct, excepting when the glumes are moistened and viewed by transmitted light." (*Scribner.*) In thickets at Agassiz, B.C., on the mountain side, 1889. (*Macoun.*)

(2904.) **F. occidentalis,** Hook.; Macoun, Cat. IV., 235.

On rocks, North Arm, Burrard Inlet, B.C., April 30, 1889. (*Macoun.*)

(2907.) **F. rubra,** Linn., var. **longearistata,** Hack. in herb. Scribner.

"Your No. 88 is this variety, and is apparently the same as 15 of Howell, named by Dr. Vasey *F. ovina*, L., var. *polyphylla.*

No. 87 is very near No. 88, but possibly distinct." (*Scribner.*)

No. 87 is from Shuswap Lake, and No. 88 from Yale, B.C.

730. BROMUS.

(2914.) **B. Hookerianus,** Thurber; Macoun, Cat. IV., 238.

In thickets at Agassiz and Spence's Bridge, B.C. 1889. (*Macoun.*)

(2925.) B. TECTORUM, Linn.; Macoun, Cat. IV., 240.

Introduced in meadows and cultivated fields at Spence's Bridge, B.C. 1889. (*Macoun.*)

736. ELYMUS.

(3209.) **E. nitidus,** Vasey, Bull. Torr. Bot. Club, XIII., 120.

"Culms 2½ to 3 feet high, rather stout and leafy, sterile shoots half as long; leaves erect rigid, scabrous, 6 to 8 inches long, 2 to 3 lines wide, slender pointed; ligule nearly obsolete; sheaths scabrous; spike about 4 inches long, erect; spikelets 1 to 2 at each joint, three to five-flowered; empty glume 6 to 7 lines long, including the awn, the upper one five-nerved, lower one three to four-nerved, scabrous on the nerves; flowering glume about 5 lines long, with a fine scabrous awn of equal length, obscurely five-nerved, smooth or nearly so, punctulate and shining; palet a little shorter, ciliate-scabrous on the nerve. The spike is less thick than in *E. Virginicus*, and more compact than in *E. striatus.*" (*Vasey,*) Quite common in damp thickets at Agassiz, Yale and Shuswap Lake, B.C. 1889. (*Macoun.*)

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(2948.) **E. Macounii,** Vasey, Bull. Torr. Bot. Club, XIII., 119; Macoun, Cat. IV., 246.

"Culm 2 to 3 feet high, smooth, leaves of culm 3 or 4, rigid, erect, narrow, scabrous, 3 to 6 inches long; ligule short and truncate; spike slender, erect, cyclindrical 3 to 5 inches long; commonly in slender specimens there is but one spikelet at each joint of the rachis, in stronger ones the lower spikelets are in pairs and the upper ones single; frequently some of the spikelets have three glumes, even some of the double ones, i.e., one glume on each side and one in front. Spikelets one to three-flowered, empty glumes linear-lanceolate, rigid, scabrous, mostly three-nerved, 3 to 4 lines long, and running into an awn as long or longer; flowering glumes oblong-lanceolate, punctulate below and scabrous above, 4 or 5 lines long, with an awn as long or longer, five-nerved; palet equalling the glume, obtuse." (*Vasey.*) In tufts on dry hillsides and in hollows, at and around, Kamloops, B.C., 1889. (*Macoun.*) "These specimens differ from the type only in their pubescent lower sheathes and leaves. Axis of spike articulated." (*Scribner.*)

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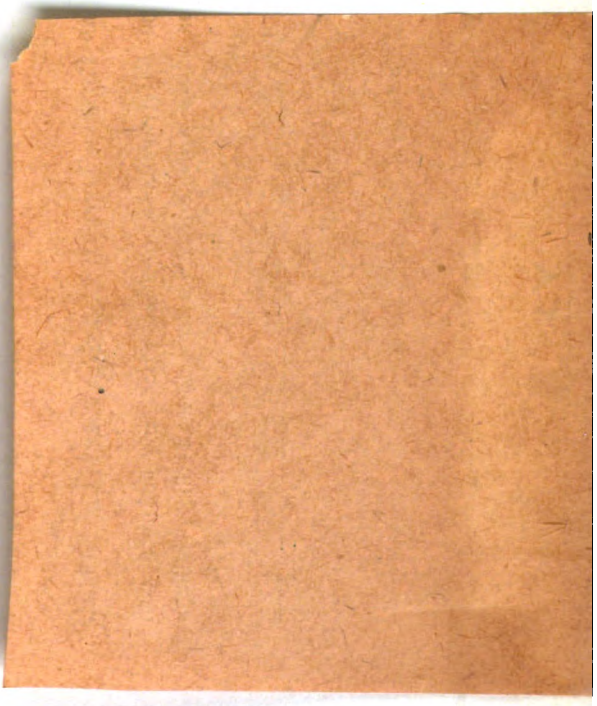
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